Planned / Background Improvements

There are no background improvements planned for the Yerba Buena Road Corridor.

Required Transportation Improvements

The proposed project includes numerous improvements to the surrounding transportation network including improvements to freeways, expressways, and local streets. There are required and funded changes at the U.S. 101 / Yerba Buena Rd. interchange and on U.S. 101 itself, described in a following section below. The EEHVS project also includes the fully funded improvements described below as part of the project.

San Felipe Road / Yerba Buena Road (S). Add a second left-turn lane to the eastbound, westbound and southbound approaches. All work will occur within the existing right-of-way.

Silver Creek Road / Yerba Buena Road. Extend the southbound left-turn pocket. Re-align eastbound and westbound movements to improve the existing operation. All work will occur within the existing right-of-way.

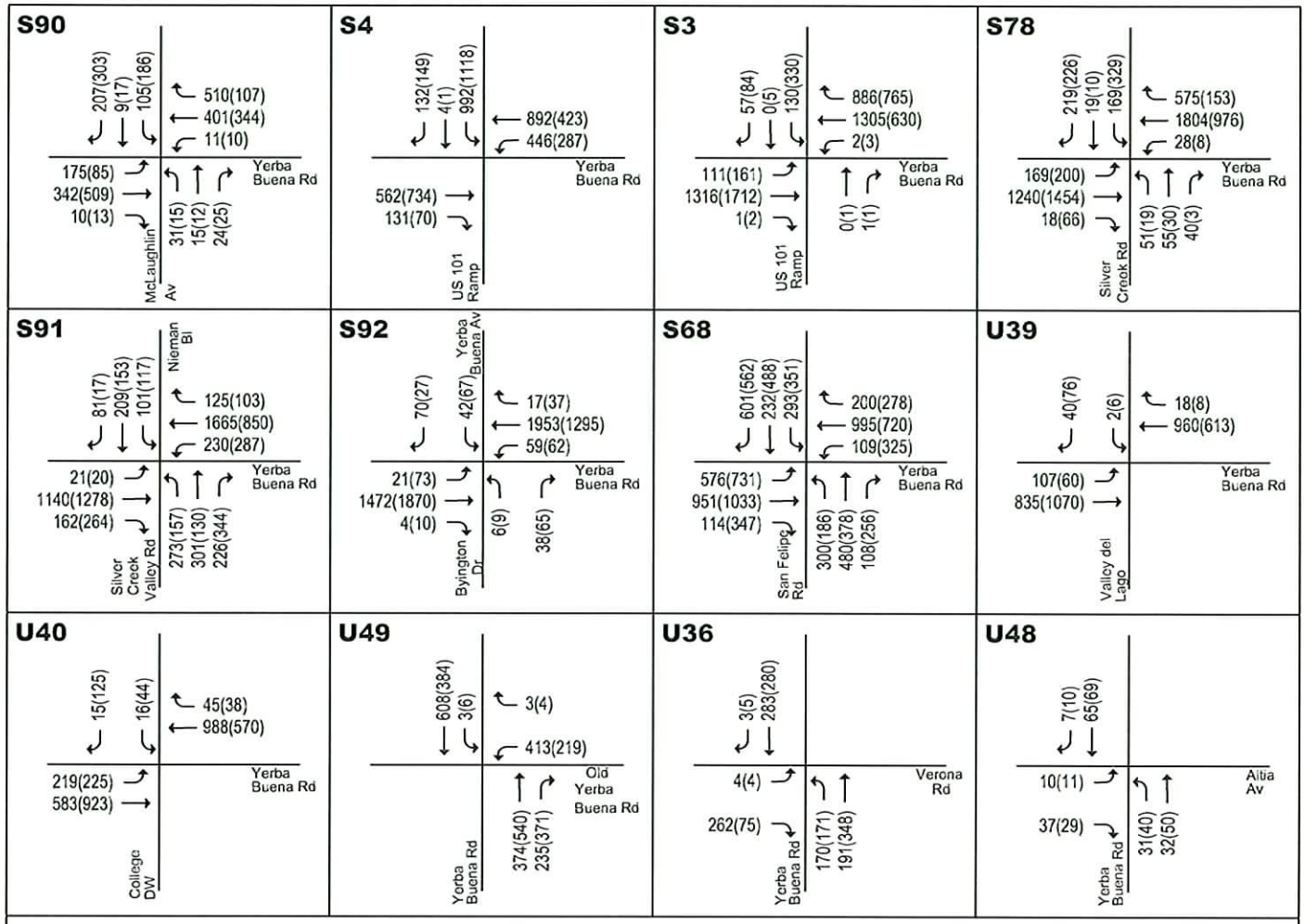
Realignment and Extension of Yerba Buena Road. The northernmost segment of Yerba Buena Road will be realigned and extended from its current terminus at Fowler Road northward approximately 0.4 miles to Aborn Road, where it will connect with Murillo Avenue. The revised alignment would depart from the existing alignment just north of Verona Road following a reverse curve that first bends towards the east and then back towards the west. Compared to the existing alignment, the new alignment would be approximately 700 feet east of the current Yerba Buena Road / Altia Avenue intersection and about 200 feet east of the present Yerba Buena Road/Fowler Road intersection. As proposed, the realigned and extended roadway would have one travel lane in each direction.

Downgrading of Selected Roadway. The Evergreen • East Hills Vision Strategy would downgrade the General Plan designation for Yerba Buena Rd. east of San Felipe Rd. from a four-lane to a two-lane facility.

Project Volumes

Turning movement volumes under project conditions at studied intersections in the corridor are shown in Figure 18. The project-sponsored intersection improvements at San Felipe Road and Yerba Buena Road (S) would prevent left turns onto Yerba Buena Road from Buena Park Court. Instead, drivers will be forced to turn right on to westbound Yerba Buena Road and then make a U-turn at the Byington Drive / Yerba Buena Road intersection. Peak-hour traffic counts were conducted at all affected locations to determine the magnitude of traffic rerouted at each location. In general, the volume of reassigned traffic is low and would have a minimal affect on intersection operations.

The proposed project would extend Yerba Buena Road northward to connect with Murillo Avenue at Aborn Road. This new street connection may cause some existing traffic on San Felipe Road to divert to Yerba Buena Road. It is anticipated that this network change could affect traffic patterns as far north as Norwood Avenue. Because Yerba Buena Road is situated near the eastern edge of the urban area, its use is expected to be limited to serving trips with origins or destinations in the immediate vicinity. Potential users of the new Yerba Buena Road extension include residents of neighborhoods east of Ruby Avenue (selected trips), certain Evergreen Valley College students/staff (from neighborhoods east of Ruby Avenue), and certain patrons/employees of the shopping center at San Felipe/Yerba Buena Road (from neighborhoods east of Ruby Avenue). It is estimated that the new roadway connection would cause



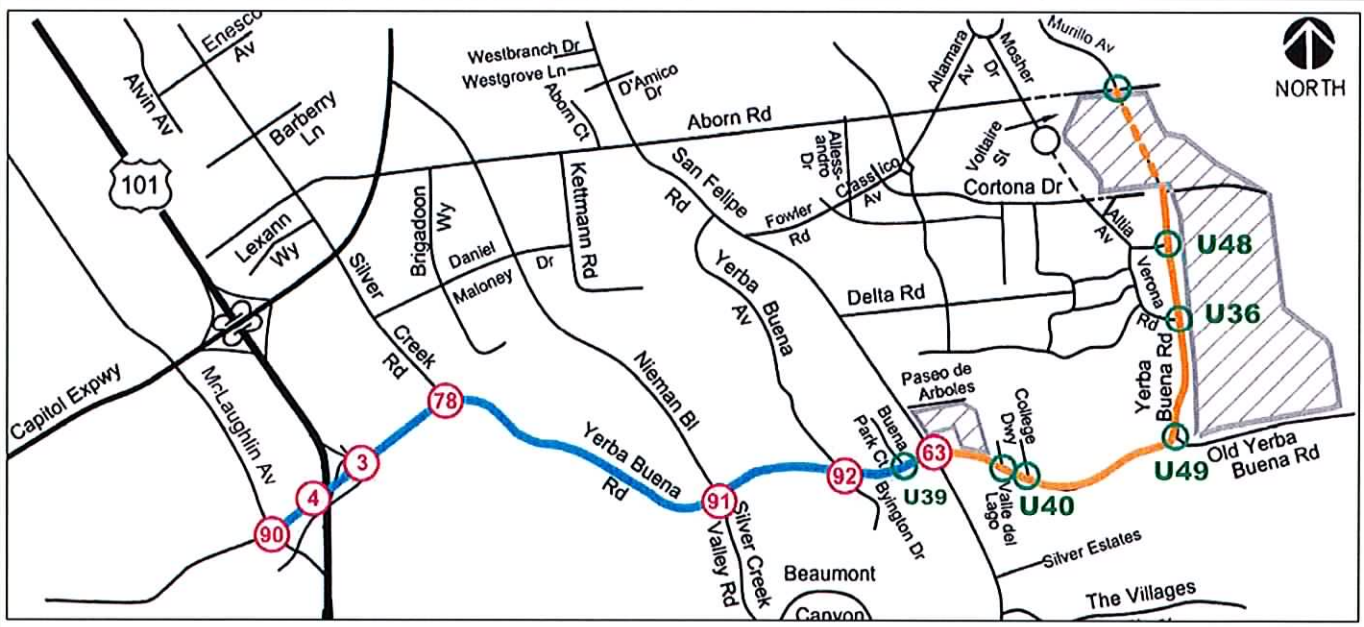


Figure 18

YERBA BUENA ROAD PROJECT TRAFFIC VOLUMES SCENARIO V

Evergreen • East Hills Vision Strategy

Legend

XX(XX) = AM(PM) Peak-Hour Volumes

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roughly 100 vehicles to divert from their existing route along San Felipe Road to Yerba Buena Road during both the AM and PM peak hours.

Level of Service Analysis

The results show that all of the signalized intersections along the Yerba Buena Road Corridor would operate within standards during the AM or PM peak hours with the project (see Table 17).

Table 17

Yerba Buena Road Corridor Level of Service Analysis

	Existing				Background				Project V			
	AM		PM		AM		PM		AM		PM	
Intersection	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
McLaughlin Ave. and Yerba Buena Rd.	22.9	C	26.0	C	22.9	C	26.0	C	22.7	C	25.5	C
U.S. 101 and Yerba Buena Rd. (E)	12.7	B	16.0	B	13.8	B	34.1	C	10.2	B	16.4	B
U.S. 101 and Yerba Buena Rd. (W)	25.8	C	26.4	C	35.9	D	29.1	C	30.8	C	31.5	C
Silver Creek Road and Yerba Buena Road	20.6	C	21.4	C	20.0	C	23.8	C	20.3	C	22.8	C
Nieman Blvd. and Yerba Buena Rd.	33.2	C	30.0	C	51.4	D	26.3	C	32.2	C	30.5	C
Byington Dr. and Yerba Buena Rd.	13.1	B	10.1	B	12.0	B	20.5	C	11.4	B	11.6	B
San Felipe Road and Yerba Buena Road	32.9	C	34.2	C	78.3	E	105.5	F	36.9	D	37.9	D

Queueing

The adequacy of left turn pocket storage was evaluated for four signalized intersections in the corridor. The number of vehicles in queue was calculated using the TRAFFIX queue length software. Queue lengths in feet were calculated assuming 20 feet per vehicle. Table 18 summarizes the queueing findings.

Existing Conditions

The following intersections were observed to have back-ups out of the turn pockets during peak hours.

San Felipe Road and Yerba Buena Road. The eastbound left-turn movement experiences long queues that extend past the end of the existing turn pocket and spill over to the adjacent through lane during both the AM and PM peak hours. At times, the queue extends past Buena Park Court. The existing signal settings allow the left-turn phase to be extended until all queued vehicles clear the intersection.

Silver Creek Road and Yerba Buena Road. The eastbound left-turn pocket occasionally overflows during the PM peak hour. At one point, vehicles on the eastbound approach were queued past Gardie Place Way. Although the queue was long, all vehicles were able to clear the intersection in a single cycle.

Nieman Boulevard / Silver Creek Valley Road and Yerba Buena Road. During the AM peak hour, the queue of left-turn traffic on the westbound and northbound approaches occasionally spilled out of the turn pockets and to the adjacent through lane. Even so, the left-turn queues dissipated fully in each signal cycle.

Table 18
Yerba Buena Road Corridor Left-turn Storage Analysis

			Existing		Background				Project Conditions					
Intersection	Peak Hour	Mvmt.	# Lanes	Storage Per Lane	Proposed # Lanes	Storage Per Lane	Vehicle Queue	Required Storage Per Lane	Proposed # Lanes	Storage Per Lane	Vehicle Queue	Required Storage Per Lane	Comments on whether Proposed Left-Turn Storage Fulfills Length Requirements	
US 101 and Yerba Buena Road (E)	AM	SBL	1	330	1	330	13	260	1	330	7	140	Adequate	
	PM	SBL	1	330	1	330	7	140	1	330	16	320	Adequate	
US 101 and Yerba Buena Road (W)	AM	SBLTR	2	250	2	250	48	480	2	250	39	400	Inadequate	2nd lane on SB off ramp may be extended to provide the required storage using existing paved shoulder. Even without improvements, queue will not encroach onto freeway mainline.
	PM	SBLTR	2	250	2	250	31	320	2	250	40	400	Inadequate	
	AM	WBL	1	280	1	280	15	300	1	280	19	380	Inadequate	Improvements to increase storage are not feasible. WBL turn pocket is end-to-end with EBL turn pocket at US 101/Yerba Buena (E).
	PM	WBL	1	280	1	280	16	320	1	280	13	260	Adequate	
San Felipe Road and Yerba Buena Road (S)	AM	SBL	1	260	1	260	19	380	2	260	16	160	Adequate	
	PM	SBL	1	260	1	260	14	280	2	260	21	220	Adequate	
	AM	NBL	2	180	2	180	8	80	2	180	17	180	Adequate	
	PM	NBL	2	180	2	180	2	20	2	180	12	120	Adequate	
	AM	EBL	1	220	1	220	21	420	2	280	29	300	Inadequate	Improvements to increase storage are not feasible without eliminating EBL into Buena Park Court.
	PM	EBL	1	220	1	220	35	700	2	280	36	360	Inadequate	
Silver Creek Road and Yerba Buena Road	AM	SBL	2	240	1	240	10	200	2	240	10	100	Adequate	SBL turn lanes are different lengths. Length of shared SB left/through lane is 400 feet. Length of SBL turn pocket closer to median is 90 feet.
	PM	SBL	2	240	1	240	13	260	2	240	18	180	Adequate	

The following intersections are projected to have left turn queues longer than the existing turn pockets on one or more legs of the intersection.

U.S. 101 and Yerba Buena Road (W). The U.S. 101 off-ramp has two lanes of 250 feet each at the signal with Yerba Buena Road. This storage is insufficient under background and project conditions, although the queue would not interfere with freeway or off-ramp operations. If desired, the turn pockets could be extended using the existing shoulder area. The westbound left turn also would extend out of the pocket under background and project conditions. The pocket cannot be lengthened because of the adjacent northbound left-turn pocket.

San Felipe Road and Yerba Buena Road (S). The eastbound left turn storage length is shown to be inadequate under background and project conditions. The left turn lanes could be lengthened, but this would require the elimination of left turn access at Buena Park Court.

Unsignalized Intersection Analysis

The unsignalized study intersections were analyzed to see if signalization or other changes to traffic control would be warranted under existing or project conditions. Peak hour signal warrant checks (*Caltrans Traffic Manual*, Chapter 9, Warrant 11) were performed at eight unsignalized intersections along the Yerba Buena Corridor. The analysis is summarized in Table 19. The peak-hour signal warrant is met at a particular intersection when existing volumes or projected volumes on the major and minor streets reach a defined threshold. Engineering judgment needs to be exercised to determine that a signal would improve the overall safety and operation of the intersection and would not unduly disrupt traffic flow on the major street. Recommendations from this analysis follows.

Table 19

Yerba Buena Road Corridor Signal Warrants Analysis

	Existing		Project Scenario V		
Intersection	AM Peak Warrant Met?	PM Peak Warrant Met?	AM Peak Warrant Met?	PM Peak Warrant Met?	Recommendations
Murillo Avenue / Yerba Buena Road and Aborn Road	No	No	Yes	Yes	Install signal
Yerba Buena Road and Altia Avenue	No	No	No	No	Leave as is (one-way stop, T)
Yerba Buena Road and Verona Road	No	No	No	No	Leave as is (one-way stop, T)
Buena Park Court and Yerba Buena Road	No	No	No	No	Close median
Yerba Buena Road and College Development Site Driveway	No	No	No	Yes	Install signal
Valle del Lago and Yerba Buena Road	No	No	No	No	Leave as is (one-way stop, T)
Evergreen Valley College Driveway and Yerba Buena Road	No	No	No	No	Leave as is (one-way stop, T)
Yerba Buena Road and Old Yerba Buena Road	No	No	Yes	Yes	Install signal

Murillo Avenue / Yerba Buena Road and Aborn Road. This intersection will see increased traffic due to the new development at the Berg / IDS / Legacy Properties. With the project, this intersection is estimated to meet signal warrants. A new signal should be installed with the project.

Buena Park Court / Yerba Buena Road. This intersection currently is a T- intersection allowing all movements. It does not meet signal warrants and would not meet warrants in the future with the project. In order to provide sufficient room to lengthen the turn pockets at the adjacent San Felipe Road / Yerba Buena Road intersection, it will be necessary to close the median at Buena Park Court. The traffic volume using Buena Park Court is relatively minor. In order for vehicles to access Buena Park Court, u-turns will be necessary at the nearest cross-streets. Traffic volumes were reassigned to the adjacent intersections, and no significant impacts were identified.

Evergreen College Development Site Access Driveway / Yerba Buena Road. With the project, a new signal is necessary in order to provide access to the site. The intersection will require a break in the median and one left turn pocket in the eastbound direction of travel.

Evergreen Valley College Driveway / Yerba Buena Road. This intersection will experience a different traffic pattern with the extension of Yerba Buena Road north to Aborn Rd. There is estimated to be some reassignment of existing traffic exiting the college to turn left, toward the new extension. Traffic volumes are not projected to meet signal warrants, but this intersection should be monitored. There may be other factors necessitating consideration for signalization, such as pedestrian access, that should be monitored as well.

Yerba Buena Road / Old Yerba Buena Road. This intersection has very little traffic today; however with the project it would become a main entrance to the Berg / IDS / Legacy Properties. It is expected to meet signal warrants with the project, and a signal should be installed.

US 101 / Yerba Buena Interchange Operations

This section describes existing and future operations at the U.S. 101 / Yerba Buena Road interchange. The EEHVS includes improvements to U.S. 101 and the interchanges in the Evergreen area.

Planned Operational Improvements to U.S. 101

The U.S. 101 Central Corridor Study, which was prepared under the guidance of the VTA, identified a range of improvements that would reduce traffic congestion resulting from merging and weaving conflicts and improve the overall U.S. 101 freeway system performance. This includes eliminating mainline traffic bottlenecks and improving safety. In response to comments made by Caltrans Highway Operations and Design, the project description resulting from this study was refined through further operations analyses. Because the Evergreen • East Hills Vision Strategy would provide the necessary funding for such freeway improvements, they are considered project-sponsored improvements and are thus included in the analysis of project levels of service.

The following improvements will be constructed on U.S. 101 in the area of the Yerba Buena Corridor:

- Construct an additional lane in the southbound direction from the current lane drop just south of Story Road to the Yerba Buena Road overcrossing.

- Add a new on-ramp from the northbound collector-distributor (C-D) road between Yerba Buena Road and Capitol Expressway to northbound U.S. 101 to allow traffic from Yerba Buena Road to enter the freeway before Capitol Expressway.

- Remove the existing C-D road and add a southbound auxiliary lane between Capitol Expressway and Yerba Buena Road.

- Construct a new two-lane off-ramp from southbound U.S. 101 to Yerba Buena Road allowing traffic to exit the freeway after Capitol Expressway.

All of these improvements will be constructed within the existing Caltrans right-of-way.

Caltrans and the VTA have prepared a Draft initial Study (IS) / Negative Declaration (ND) for the proposed U.S. 101 operational improvements independent of this project (EEHVS).

Queueing at Freeway Ramp Meters

Ramp meters control all of the U.S. 101 on ramps serving the Evergreen area. Presently, meters control freeway entrances for the peak direction of travel only — northbound during the AM peak period and southbound during the PM peak period. Since the Evergreen area is predominantly residential and employment centers are concentrated mostly in areas to the north, the longest ramp meter queues occur at the northbound on ramps during the AM peak hour. The existing maximum queue lengths and delay at northbound U.S. 101 on ramps serving the Evergreen area were measured during the AM peak hour through direct observation in the field. Table 20 shows queue lengths and delay at the Yerba Buena on-ramp.

Without the proposed U.S. 101 improvements, project-generated traffic would cause a substantial increase in delay at the U.S. 101/Yerba Buena Road interchange. Compared to existing conditions, delays at the northbound on ramp are projected to increase by as much as 31 minutes under Project Scenario V. It should be noted that the queue lengths and wait times reported in Table 20 are theoretical estimates based on the projected traffic demand at each on ramp. In reality, drivers faced with such lengthy delays entering U.S. 101 at Yerba Buena Road would likely divert to faster alternate routes including other U.S. 101 on ramps or non-freeway routes. The proposed new connection from Yerba Buena Road to northbound U.S. 101 would substantially reduce the queue length and delay at this location to levels that are below existing conditions.

ITS Plan

Intelligent Transportation Systems, or ITS, is the use of communications and computer technology to increase the efficiency of signal operations and reduce delays in the system. The City of San Jose has developed an ITS plan for the Evergreen area. The plan calls for traffic surveillance cameras and signal interconnect systems to be installed via cables, conduit, and trunk lines or wireless links where appropriate. Cameras are planned to be added to four intersections within the corridor:

U.S. 101 NB On Ramp and Yerba Buena Road

Silver Creek Road and Yerba Buena Road

Nieman Boulevard and Yerba Buena Road

San Felipe Road and Yerba Buena Road

The plan calls for new conduit and communication cables to be installed on Yerba Buena Road from Silver Creek Road to Nieman Boulevard. The plan calls for a wireless communication link to be installed on Yerba Buena Road from Yerba Buena Avenue to Old Yerba Buena Road, to connect the traffic signal controller at the Yerba Buena Rd. and Old Yerba Buena Rd. intersection to the City's ITS system. A wireless link is planned in order to minimize the amount of trenching within the public right-of-way at the end of the communication links along the east foothills. A new fiber optic trunk line will be installed from U.S. 101 to Silver Creek Road (see Figure 19).

Table 20
Maximum Queue Length and Delay at Yerba Buena Rd. and Northbound U.S. 101 On Ramp – AM Peak Hour

	Yerba Buena Road	
	Queue Length (veh.)	Wait Time (min:sec)
Existing Conditions	76	13:15
Background Conditions	79	13:45
Project Conditions		
Scenario V	253	44:15 [b]
Scenario V with Improvements	72	12:45

Notes:
Queue times were calculated using the surveyed existing (2004) queue lengths and estimated background and project trips, in combination with the future ramp meter rates obtained from the *Final Draft Traffic Operations Report--US 101 Operational Improvements from I-280/680 to Yerba Buena Road*, Fehr & Peers Associates, Inc., July 2005.
[b] Theoretical results based on projected traffic demand. In actuality, drivers faced with such lengthy delays would likely divert to alternate routes including other US 101 on ramps or parallel non-freeway routes.

Pedestrian and Bicycle Facilities

The corridor was evaluated for pedestrian and bicycle access. Recommendations for improvement are made where appropriate.

Pedestrians

Sidewalks run continuously on the north and south sides of Yerba Buena Road to the intersection with Buena Park Court, where the sidewalks break for approximately 250 feet on both sides of the street. At the intersection with San Felipe Road eastward to a point approximately 300 feet north of the intersection with Old Yerba Buena Road the sidewalk is present on only the north or west side of the street. At this location the sidewalk is terminated on the west side and is present only on the east side of the street. At the north boundary of Montgomery Hill Park Yerba Buena Road has sidewalks on both sides of the street, until Verona Road, where the east sidewalk is lost and only the west sidewalk remains, which carries on to the intersection at Fowler Road.

The EEHVS may fund either wholly or partially miscellaneous transportation improvement projects at to-be-determined locations in the Evergreen • East Hills area. Such improvements may include sidewalks. The City may want to consider as a candidate for these funds the extension of the sidewalk adjacent to Buena Park Court.

Bicycles

A bike lane is present in the eastbound lanes along Yerba Buena Road from San Felipe Road to the point at the north boundary of Montgomery Hill Park. For the remainder of Yerba Buena Road, in both directions of travel, curb widths are sufficient to allow for adequate bicycle space.

Summary of Improvements

Project improvements to the Yerba Buena Road Corridor are as follows (see Figure 19):

Required Transportation Improvements

- Add a new on-ramp from the northbound collector-distributor (C-D) road between *Yerba Buena Road* and *Capitol Expressway* to northbound U.S. 101 to allow traffic from Yerba Buena Road to enter the freeway before Capitol Expressway.

- Construct a new two-lane off-ramp from southbound *U.S. 101 to Yerba Buena Road* allowing traffic to exit the freeway after Capitol Expressway.

- Extend the southbound left-turn pocket at *Silver Creek Road and Yerba Buena Road.* Re-align eastbound and westbound movements to improve the existing operation.

- Add a second left-turn lane to the eastbound, westbound and southbound approaches.at the *Yerba Buena Road / San Felipe Road* intersection. Lengthen the eastbound left turn pocket. These improvements will necessitate the closing of the median on Yerba Buena Road at the *Buena Park Court and Yerba Buena Road* intersection.

- The Evergreen • East Hills Vision Strategy would downgrade the General Plan designation *for Yerba Buena Rd.* east of San Felipe Rd. from a four-lane to a two-lane facility.

Recommended Transportation Amenities

- Install ITS traffic camera systems at the intersections of *U.S. 101 NB On Ramp and Yerba Buena Road, Silver Creek Road and Yerba Buena Road, Nieman Boulevard and Yerba Buena Road,* and *San Felipe Road and Yerba Buena Road.* Install communication cables, conduit and wireless links as appropriate.

- Consider using the EEHVS miscellaneous transportation improvement funds to extend the sidewalks on both sides of *Yerba Buena Road* for 250 feet to the east of *Buena Park Court* to complete the missing sidewalk segment at that location.

- Consider a study of potential weekend traffic signal coordination on *Yerba Buena Road.*

Required as Part of Site Development

- Construct a median break and left-turn pocket and install a traffic signal at the proposed entrance to the Evergreen Valley College Property development site along *Yerba Buena Road.*

- Install a traffic signal at the *Yerba Buena Road / Old Yerba Buena Road* intersection at Legacy Properties.

- Extend *Yerba Buena Road* as a two-lane roadway from its current terminus to Aborn Road.

- Install a traffic signal at the *Murillo Ave. / Yerba Buena Rd. / Aborn Rd.* intersection.

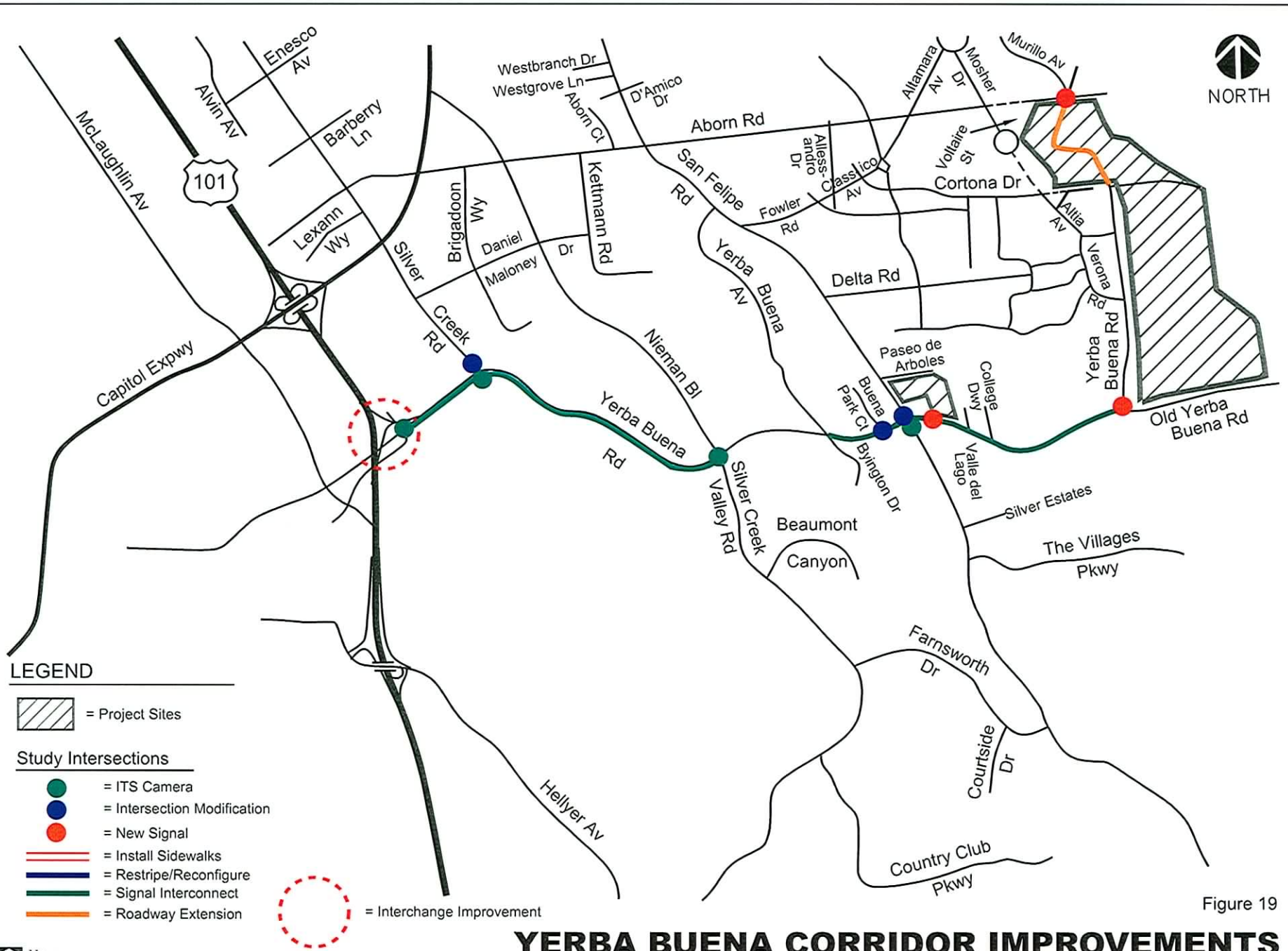

Figure 19

YERBA BUENA CORRIDOR IMPROVEMENTS

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8.
King Road / Silver Creek Road Corridor

This chapter describes the transportation system in the King Road / Silver Creek Road Corridor, including roadway cross-section, signalized and unsignalized intersection operations, intersection queueing, and pedestrian and bicycle facilities. The King Road / Silver Creek Road Corridor in the Evergreen • East Hills area extends from the King Road / I-680 interchanges southward approximately two miles to the Silver Creek Road / Yerba Buena Road intersection (Figure 20), providing access to commercial areas, housing areas, and two schools: the Grandin Miller Elementary School located at Marsh St. and King Road., and Silver Creek High School located at Daniel Maloney Drive and Silver Creek Road.

Contents

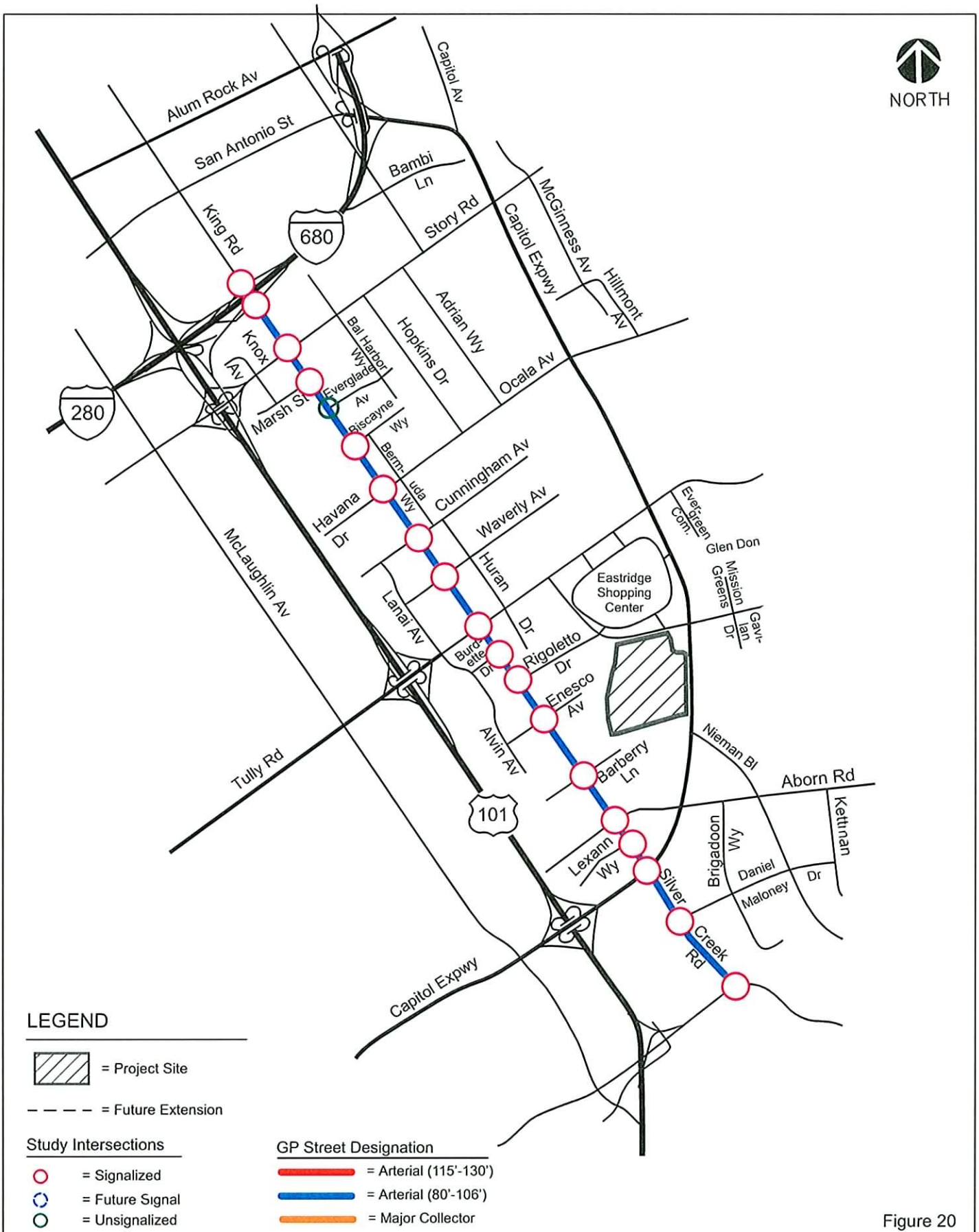

Figure 20

KING ROAD / SILVER CREEK ROAD CORRIDOR

Evergreen • East Hills Vision Strategy

Hexagon Transportation Consultants, Inc.

Roadway Cross-Section

King Road / Silver Creek Road is a designated four-lane arterial for its entire length. North of Aborn Road, this arterial is named King Road. South of Aborn Road, it is named Silver Creek Road. This roadway has a four-lane cross section except for the segment between Flanigan Drive (about one-third of a mile south of Tully Road) and King Court (about one-tenth of a mile north of Aborn Road), which has two northbound through lanes and one southbound through lane.

Traffic Operations

This section describes existing and future levels of service and queueing at signalized intersections. It also includes an analysis of traffic control options for unsignalized intersections. The intersections studied along the King Road / Silver Creek Road Corridor are displayed in Figure 20 and are as follows:

Signalized Intersections Analyzed

- *King Road and I-680 (N)*
- *King Road and I-680 (S)*
- *King Road and Story Road*
- *King Road and Marsh Street*
- *King Road and Biscayne Way*
- *King Road and Ocala Avenue*
- *King Road and Cunningham Avenue*
- *King Road and Waverly Avenue*
- *King Road and Tully Road*
- *King Road and Burdette Drive*
- *King Road and Rigoletto Drive*
- *King Road and Enesco Avenue*
- *King Road and Barberry Lane*
- *King Road and Aborn Road*
- *King Road and Lexann Way*
- *King Road and Capitol Expressway*
- *King Road and Daniel Maloney Drive*
- *King Road and Yerba Buena Road*

Unsignalized Intersections Analyzed

- *King Road and Everglade Avenue*

Planned / Background Improvements

There are no background improvements for the King Road Corridor.

Required Transportation Improvements

The proposed project includes numerous improvements to the surrounding transportation network including improvements to freeways, expressways, and local streets. The following improvements along King Road would be fully funded by the project:

Intersection Improvements

Project-sponsored improvements at signalized study intersections are described below.

King Road / Tully Road. Add a second left-turn lane to the southbound approach. Add a separate right-turn lane to the eastbound approach. Additional right-of-way will be required.

Silver Creek Road / Capitol Expressway. Widen the curb lane on the westbound receiving leg of Capitol Expressway to eliminate impedance to westbound through traffic caused by vehicles turning into the adjacent shopping center. Extend the eastbound left-turn pocket. Additional right-of-way will be required.

Silver Creek Road / Yerba Buena Road. Extend the southbound left-turn pocket. Re-align eastbound and westbound movements to improve the existing operation. All work will occur within the existing right-of-way.

Project Volumes

Turning movement volumes under project conditions at studied intersections in the corridor are shown in Figure 21A-B.

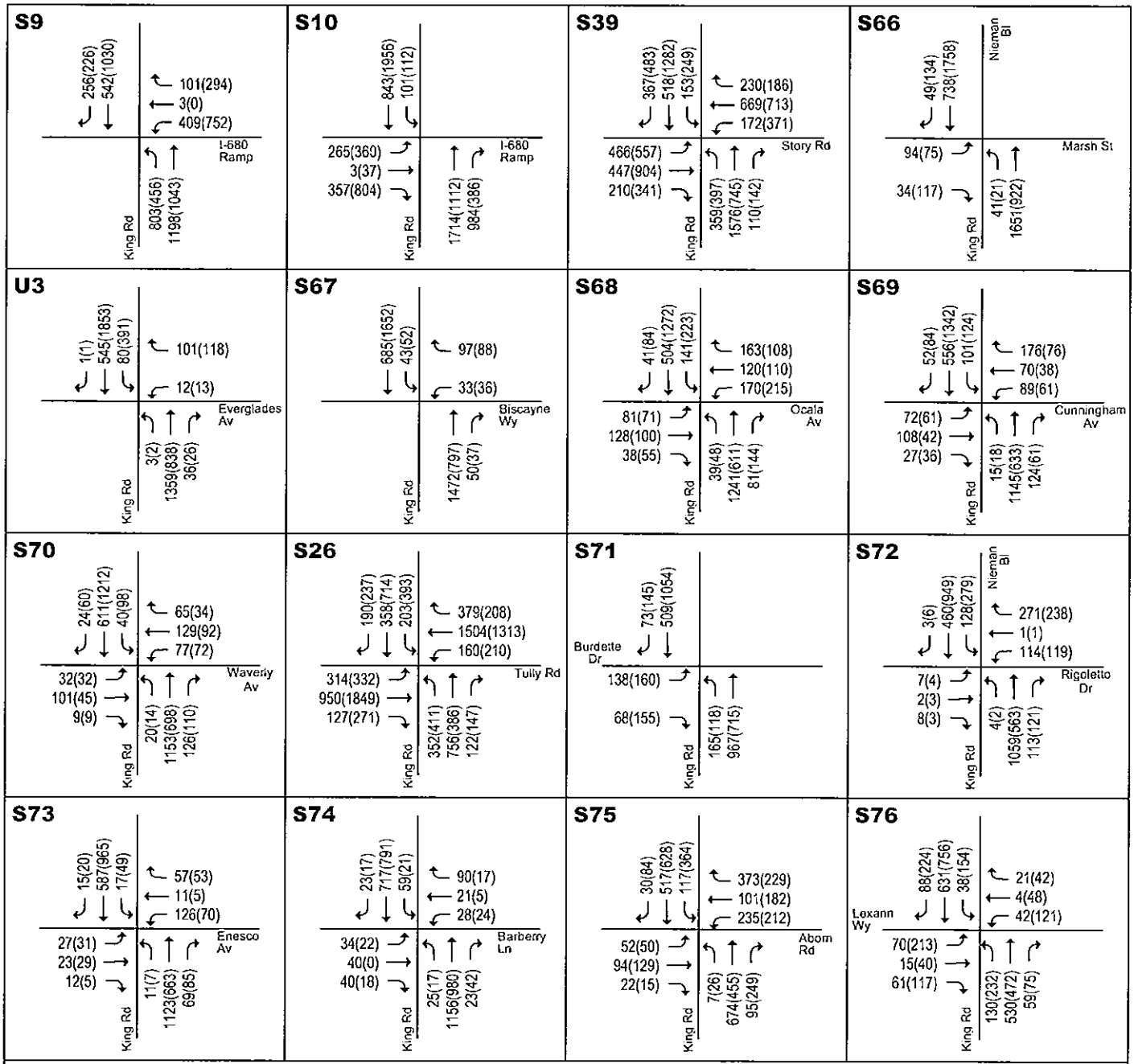

Figure 21A

KING ROAD/SILVER CREEK ROAD PROJECT TRAFFIC VOLUMES SCENARIO V

Evergreen • East Hills Vision Strategy

Legend

XX(XX) = AM(PM) Peak-Hour Volumes

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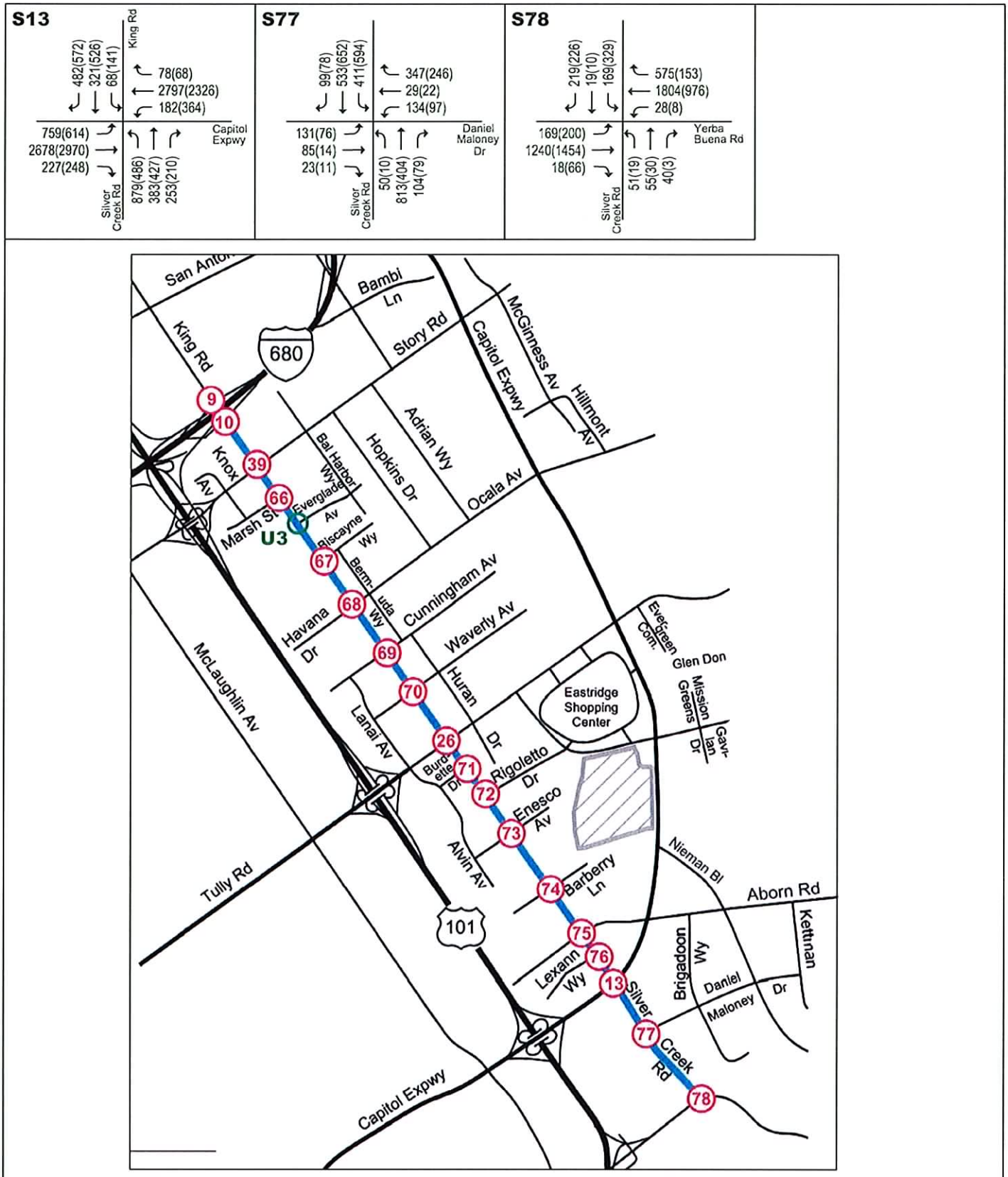

Figure 21B

KING ROAD/SILVER CREEK ROAD PROJECT TRAFFIC VOLUMES SCENARIO V

Evergreen • East Hills Vision Strategy

Legend

XX(XX) = AM(PM) Peak-Hour Volumes

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Level of Service Analysis

The results show that the intersection of Silver Creek Road and Capitol Expressway would operate below standards during the AM peak hour under project conditions (see Table 21). All other signalized intersections along King Road are expected to operate at LOS D or better.

Table 21

King Road / Silver Creek Road Corridor Level of Service Analysis

	Existing				Background				Project V			
	AM		PM		AM		PM		AM		PM	
Intersection	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
King Road and I-680 (N)	26.5	C	34.5	C	28.0	C	36.6	D	28.1	C	37.3	D
King Road and I-680 (S)	17.7	B	34.0	C	21.6	C	36.8	D	23.4	C	38.1	D
King Road and Story Road	43.8	D	47.3	D	41.4	D	46.2	D	42.5	D	47.5	D
King Road and Marsh Street	9.8	A	8.2	A	9.5	A	8.0	A	8.7	A	7.9	A
King Road and Biscayne Way	11.4	B	10.1	B	11.8	B	11.1	B	11.1	B	10.8	B
King Road and Ocala Avenue	37.4	D	35.2	D	37.7	D	35.7	D	37.3	D	35.6	D
King Road and Cunningham Avenue	19.4	B	13.0	B	19.8	B	14.5	B	18.0	B	12.7	B
King Road and Waverly Avenue	21.2	C	17.0	B	21.1	C	17.1	B	20.2	C	16.9	B
King Road and Tully Road	38.9	D	48.6	D	39.8	D	50.1	D	39.2	D	48.3	D
King Road and Burdette Drive	12.0	B	16.0	B	12.4	B	15.9	B	12.0	B	15.6	B
King Road and Rigoletto Drive	14.9	B	15.3	B	14.8	B	15.3	B	16.2	B	16.4	B
King Road and Enesco Avenue	12.6	B	12.5	B	12.3	B	12.3	B	12.4	B	12.8	B
King Road and Barberry Lane	13.8	B	6.3	A	13.9	B	6.3	A	13.8	B	6.8	A
King Road and Aborn Road	22.7	C	26.7	C	24.5	C	29.8	C	23.8	C	28.0	D
Silver Creek Road and Lexann Avenue	14.5	B	26.8	C	19.0	B	29.5	C	19.5	B	30.4	C
Silver Creek Road and Capitol Expressway	60.3	E	52.4	D	50.8	D	51.5	D	67.4	E	52.6	D
Silver Creek Road and Daniel Maloney Drive	25.7	C	20.2	C	25.3	C	20.7	C	25.8	C	20.5	C
Silver Creek Road and Yerba Buena Road	20.6	C	21.4	C	20.0	C	23.8	C	20.3	C	22.8	C

Project Impacts

The results show that, according to the City of San Jose's level of service standards for signalized intersections, the following intersection would be significantly impacted by the project scenario during the AM peak hour.

Silver Creek Road and Capitol Expressway

Impact: This intersection is expected to operate at LOS D during the AM peak hour under background conditions. The added trips as a result of the Evergreen • East Hills Vision

Strategy would cause the intersection level of service to degrade to LOS E. Based on the City of San Jose's level of service impact criteria, this constitutes a significant impact.

Mitigation: Improvements beyond the proposed project-sponsored improvements are not feasible. Intersection operations would be improved to LOS D by the addition of a fifth westbound through lane and a third eastbound left-turn lane on Capitol Expressway. In addition, a third lane would have to be added on the northbound receiving leg of Silver Creek Road to receive the triple left-turn movement. Such improvements would require acquiring 12 feet of additional right-of-way along the east side of Silver Creek Road from Capitol Expressway to Aborn Road, a distance of approximately 1,400 feet. Additional right-of-way varying in width from 4 to 11 feet would also be needed on the north side of Capitol Expressway beginning east of Silver Creek Road and extending to U.S. 101 for a total distance of approximately 2,100 feet. The necessary right-of-way acquisition would have an adverse effect on the adjacent properties resulting in a loss of landscaping and the elimination of a row of parking spaces. Alternatively, restriping the northbound approach to include two left-turn lanes, one shared left-turn/through lane, one through lane, and one right-turn lane and implementing split-phase signal control for the north and south approaches would theoretically result in LOS D. However, the proximity of U.S. 101 and the freeway interchange design would cause unbalanced usage of the triple left-turn lanes making such a modification ineffective.

Queueing

The adequacy of left turn pocket storage was evaluated for two signalized intersections in the corridor. The number of vehicles in queue was calculated using the TRAFFIX queue length software. Queue lengths in feet were calculated assuming 20 feet per vehicle. Table 22 summarizes the queueing findings.

Existing Conditions

The following intersections were observed to have back-ups out of the turn pockets during peak hours.

King Road and Tully Road. During the AM peak hour, queues frequently extend on westbound Tully Road from the U.S. 101 interchange past King Road. The Tully Road queue impedes the northbound left-turn movement, which spills out of the turn pocket. As a result, vehicles on northbound King Road attempting to complete a left turn onto westbound Tully Road must wait through multiple signal cycles.

During the PM peak hour, the southbound left-turn queue spills out of the turn pocket and not all vehicles clear during each signal cycle.

Silver Creek Road and Capitol Expressway. During the morning commute hours, the heaviest traffic flows occur on those movements leading toward U.S. 101. The ramp meter at the northbound U.S. 101 on ramp causes slow-moving queues in the far right lane of westbound Capitol Expressway. During the AM peak hour, the queue extends through the Silver Creek/Capitol intersection and continues to Aborn Road. This causes delays for traffic attempting to turn right onto westbound Capitol Expressway from southbound Silver Creek Road. The queue on southbound Silver Creek Road does not dissipate in one signal cycle and often blocks access to driveways serving the adjacent shopping center. Similarly, traffic on northbound Silver Creek Road backs up to Daniel Maloney Drive. The left-turn queue spills out of the turn pocket; however, all vehicles clear during each signal cycle.

Table 22
King Road / Silver Creek Road Corridor Left-turn Storage Analysis

			Existing		Background				Project Conditions					
Intersection	Peak Hour	Mvmt.	# Lanes	Storage Per Lane	Proposed # Lanes	Storage Per Lane	Vehicle Queue	Required Storage Per Lane	Proposed # Lanes	Storage Per Lane	Vehicle Queue	Required Storage Per Lane	Comments on whether Proposed Left-Turn Storage Fulfills Length Requirements	
Silver Creek Road and Capitol Expressway	AM	WBL	2	260	2	260	13	140	2	260	14	140	Adequate	
	PM	WBL	2	260	2	260	26	260	2	260	29	300	Inadequate	WBL turn pocket may be extended to provide the necessary storage by removing median and
	AM	NBL	2	200	2	200	48	480	2	200	57	580	Inadequate	NBL turn pocket may be extended by approximately 250 feet by removing median and landscaping. Further turn pocket lengthening to provide the required queue storage is not feasible due to the NBL turn pocket at the adjacent shopping center driveway.
	PM	NBL	2	200	2	200	34	340	2	200	37	380	Inadequate	
Silver Creek Road and Yerba Buena Road	AM	SBL	2	240	1	240	10	200	2	240	10	100	Adequate	SBL turn lanes are different lengths. Length of shared SB left/through lane is 400 feet. Length of SBL turn pocket closer to median is 90 feet.
	PM	SBL	2	240	1	240	13	260	2	240	18	180	Adequate	

During the evening commute hours, the peak direction of travel on Capitol Expressway is eastbound (away from U.S. 101). The eastbound approach at the Silver Creek/Capitol intersection experiences long queues that extend over the freeway overpass. The queue in the eastbound through lanes clears the intersection during every signal cycle. Eastbound traffic turning left onto northbound Silver Creek Road regularly overflows the turn pocket and experiences some phase failures (signal cycles in which the queue does not fully dissipate). The majority of vehicles in the inside left-turn lane make u-turns. The large number of vehicles making u-turns significantly slows the flow of traffic out of the turn pocket. Furthermore, left turn traffic on this approach is slowed by vehicles turning into the adjacent shopping center. Westbound traffic accessing the Target/gas station driveway on Capitol Expressway, south of Silver Creek Road, occasionally blocks westbound through traffic, creating long queues that block the intersection.

Silver Creek Road and Yerba Buena Road. The eastbound left-turn pocket occasionally overflows during the PM peak hour. At one point, vehicles on the eastbound approach were queued past Gardie Place Way. Although the queue was long, all vehicles were able to clear the intersection in a single cycle.

Project Conditions

The following intersection is projected to have left turn queues longer than the existing turn pockets on one or more legs of the intersection.

Silver Creek Road and Capitol Expressway. The westbound left turn queue would back up out of the pocket by 40 feet under project conditions. If desired, the turn pocket could be extended by cutting into the landscaped median. The northbound left turn pockets are shown to be inadequate under background and project conditions. To fully accommodate the estimated queue, the pockets would need to be lengthened by 380 feet. There is room to lengthen them by 250 feet by cutting into the landscaped median. Further lengthening is precluded by an adjacent left turn pocket.

Unsignalized Intersection Analysis

The unsignalized study intersections were analyzed to see if signalization or other changes to traffic control would be warranted under existing or project conditions. Peak hour signal warrant checks (*Caltrans Traffic Manual*, Chapter 9, Warrant 11) were performed at one unsignalized intersection along the King Road Corridor. The peak-hour signal warrant is met at a particular intersection when existing volumes or projected volumes on the major and minor streets reach a defined threshold. Engineering judgment needs to be exercised to determine that a signal would improve the overall safety and operation of the intersection and would not unduly disrupt traffic flow on the major street.

The unsignalized studied intersection at King Rd. and Evergreen Avenue is projected to meet signal warrants under existing and project conditions (see Table 23); however, at this time a signal is not recommended due to the close proximity of this intersection to the adjacent signals at Marsh Street. Field observations showed no lengthy delays at Everglade Avenue even though there is no signal. The intersection should be monitored for changes in its conditions.

Table 23

King Road / Silver Creek Road Corridor Signal Warrants Analysis

Intersection	Existing AM Peak Warrant Met?	Existing PM Peak Warrant Met?	Project Scenario V AM Peak Warrant Met?	Project Scenario V PM Peak Warrant Met?	Recommendations
King Road and Everglade Avenue	Yes	Yes	Yes	Yes	Monitor intersection.

ITS Plan

Intelligent Transportation Systems, or ITS, is the use of communications and computer technology to increase the efficiency of signal operations and reduce delays in the system. The City of San Jose has developed an ITS plan for the Evergreen area. The plan calls for traffic surveillance cameras and signal interconnect systems to be installed via cables, conduit, and trunk lines or wireless links where appropriate. Cameras are planned to be added to eight intersections within the corridor:

King Road and I-680 Ramps (N)

King Road and I-680 Ramps (S)

King Road and Story Road

King Road and Ocala Avenue

King Road and Tully Road

King Road and Aborn Road

King Road and Capitol Expressway

Silver Creek Road and Yerba Buena Road

There is an existing signal interconnect cable along King Road from I-680 to Lexann Avenue. The plan calls for new conduit and communication cables to be installed from Lexann Avenue to Yerba Buena Road. The existing communication system has no capacity to route the traffic surveillance video and traffic data from the area to the City's Traffic Management Center to enable real-time traffic management. To accomplish this, the plan therefore also includes a new fiber optic trunk line to be installed along King Road / Silver Creek Road from I-680 to Yerba Buena Road (see Figure 22).

Pedestrian and Bicycle Facilities

The corridor was evaluated for pedestrian and bicycle access. Recommendations for improvement are made where appropriate.

Pedestrians

King Road and Silver Creek Road have existing sidewalks along both sides of the street throughout Evergreen. Access to Grandin Miller Elementary School is aided by a traffic signal at King Road and Marsh Street. A traffic signal at Silver Creek Road and Daniel Maloney Drive provides pedestrian access to Silver Creek High School.

Bicycles

There are no bike lanes on King Road under existing conditions. The City of San Jose Bicycle Network Planning Map calls for future bicycle facilities. The EEHVS may fund either wholly or partially miscellaneous transportation improvement projects at to-be-determined locations in the Evergreen • East Hills area. Such improvements may include new bike lanes. The City may want to consider bike lanes on King Road as a candidate for these funds.

Summary of Improvements

Project improvements to the King Road Corridor are as follows (see Figure 22):

Required Transportation Improvements

- Add a second left-turn lane to the southbound approach at the *King Road / Tully Road* intersection. Add a separate right-turn lane to the eastbound approach.

- At the *Silver Creek Road / Capitol Expressway* intersection, widen the curb lane on the westbound receiving leg of Capitol Expressway to eliminate impedance to westbound through traffic caused by vehicles turning into the adjacent shopping center. Extend the eastbound left-turn pocket.

- Extend the southbound left-turn pocket at the *Silver Creek Road / Yerba Buena Road* intersection. Re-align eastbound and westbound movements to improve the existing operation.

Recommended Transportation Amenities

- Extend the westbound left turn pocket at the *Silver Creek Road and Capitol Expressway* intersection by 40 feet by cutting into the landscaped median. Extend the northbound left turn pockets by 250 feet by cutting into the landscaped median.

- Install ITS traffic camera systems at the intersections of *King Road and I-680 Ramps (N), King Road and I-680 Ramps (S), King Road and Story Road, King Road and Ocala Avenue, King Road and Tully Road, King Road and Aborn Road, King Road and Capitol Expressway, Silver Creek Road and Yerba Buena Road.* Install communication cables, conduit and wireless links as appropriate.

- Consider using EEHVS miscellaneous transportation improvement funds to add bike lanes to *King Road.*

- Consider a study of potential weekend traffic signal coordination on *King Road.*

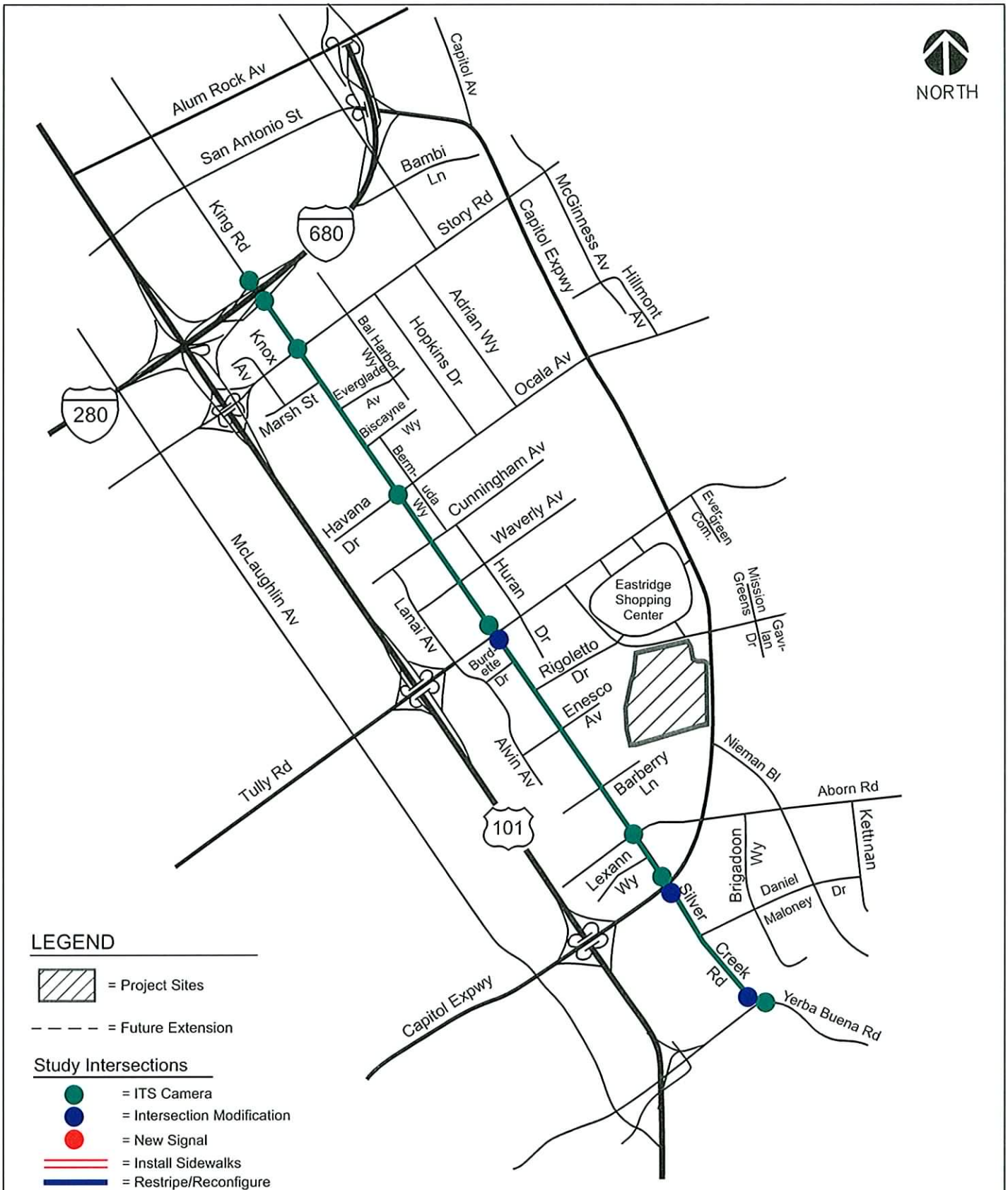

Figure 22

KING ROAD / SILVER CREEK ROAD CORRIDOR IMPROVEMENTS

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9.
Nieman Boulevard Corridor

This chapter describes the transportation system in the Nieman Boulevard Corridor, including roadway cross-section, signalized and unsignalized intersection operations, intersection queueing, and pedestrian and bicycle facilities. The Nieman Boulevard Corridor in the Evergreen • East Hills area extends from Capitol Expressway approximately two miles southeast to Yerba Buena Road (Figure 23), providing access to many housing areas and one elementary school: James F. Smith Elementary School at Nieman Boulevard and Woodbury Lane.

Contents

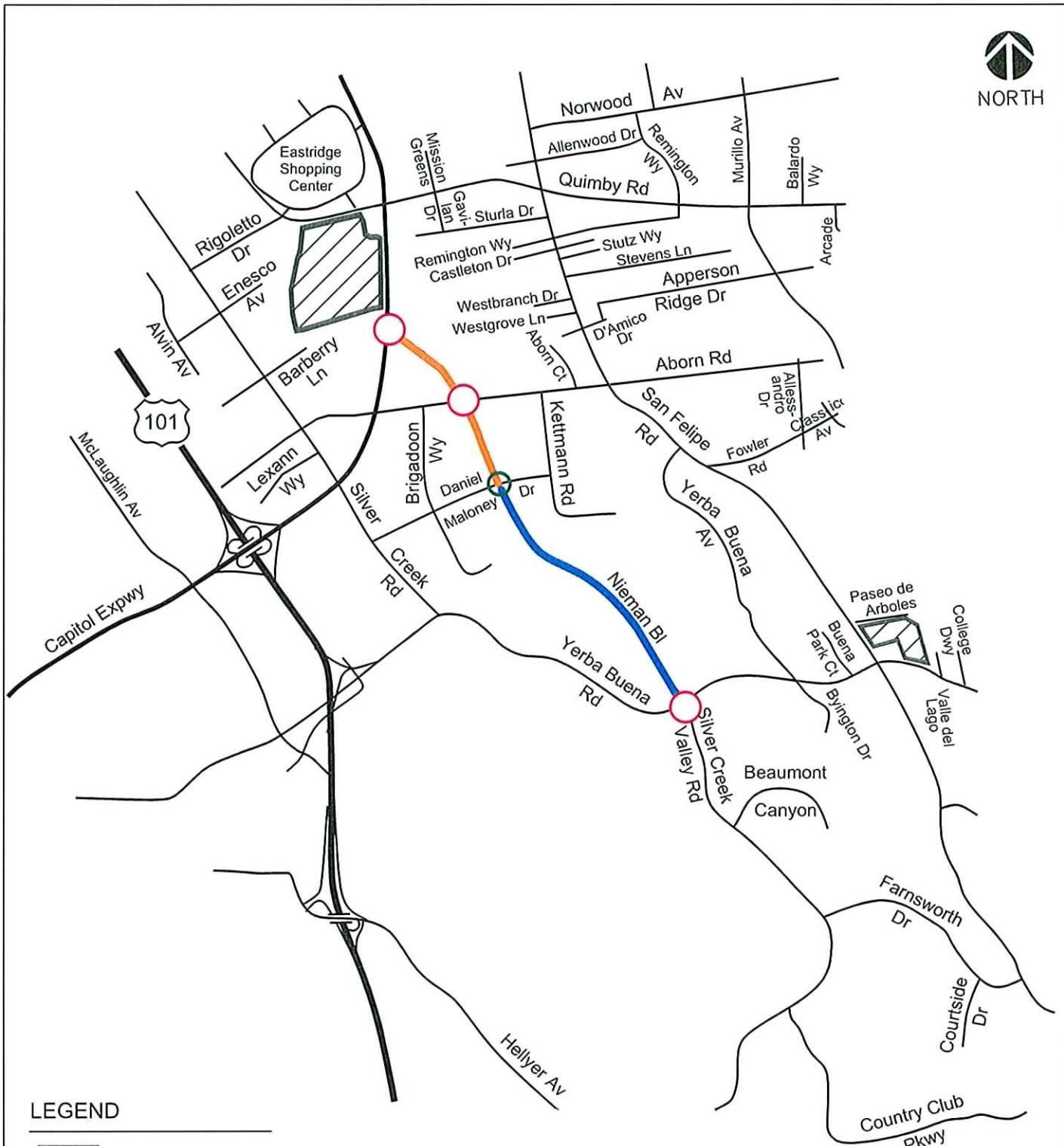

Figure 23

NIEMAN BOULEVARD CORRIDOR

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Roadway Cross-Section

Nieman Boulevard runs north-south from Capitol Expressway to Yerba Buena Road. The current General Plan designation is four-lane major collector on the segment of Nieman from Capitol Expressway to Daniel Maloney Drive, and four-lane arterial for the remainder of Nieman from Daniel Maloney Drive to Yerba Buena Road. The EEHVS includes a proposal to downgrade the General Plan designation of Nieman Boulevard to a two-lane collector, with a multi-modal cross-section. Nieman Boulevard is generally 66 feet wide with two travel lanes, bike lanes, a median two-way left turn lane, and on-street parking. Some sections do not have bike lanes or on-street parking, but the width still is 66 feet. Nieman Boulevard flares out briefly to four lanes at the signalized intersection with Aborn Road. The proposed downgrade in designation is consistent with the existing road configuration and operation. To complete the multi-modal cross-section, bike lanes and on-street parking need to be added to the sections that do not have them.

Traffic Operations

This section describes existing and future levels of service and queueing at signalized intersections. It also includes an analysis of traffic control options for unsignalized intersections. The intersections studied along the Nieman Boulevard Corridor are displayed in Figure 23 and are as follows:

Signalized Intersections Analyzed

- *Capitol Expressway and Nieman Boulevard*
- *Nieman Boulevard and Aborn Road*
- *Nieman Boulevard and Yerba Buena Road*

Unsignalized Intersections Analyzed

- Nieman Boulevard and Daniel Maloney Drive

Planned / Background Improvements

There are no planned background improvements along the Nieman Boulevard Corridor.

Required Transportation Improvements

The proposed project includes numerous improvements to the surrounding transportation network including improvements to freeways, expressways, and local streets. There is a required and funded new traffic signal, described in a following section below. The following improvement along Nieman Boulevard would also be fully funded by the project:

Downgrading of Selected Roadway. The Evergreen • East Hills Vision Strategy would downgrade the General Plan designation for Nieman Boulevard from a four-lane to a two-lane facility. Nieman Boulevard could be striped as a multi-modal street.

Project Volumes

Traffic volumes on the Nieman Boulevard Corridor are shown in Figure 24.

Signalized Intersection Analysis

The results show that all of the signalized intersections along Nieman Boulevard would operate within standards during the AM or PM peak hours with the project (see Table 24).

Table 24

Nieman Boulevard Corridor Level of Service Analysis

	Existing				Background				Project V			
	AM		PM		AM		PM		AM		PM	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Nieman Blvd. and Capitol Expressway	11.5	B	23.5	C	40.8	D	27.0	C	33.7	C	25.7	C
Nieman Blvd. and Aborn Rd.	27.7	C	31.2	C	45.2	D	31.7	C	30.4	C	38.7	D
Nieman Blvd. and Yerba Buena Rd.	33.2	C	30.0	C	51.4	D	26.3	C	32.2	C	30.5	C

Queueing

The adequacy of left turn pocket storage was evaluated for one signalized intersection in the corridor. The number of vehicles in queue was calculated using the TRAFFIX queue length software. Queue lengths in feet were calculated assuming 20 feet per vehicle. Table 25 summarizes the queueing findings.

Existing Conditions

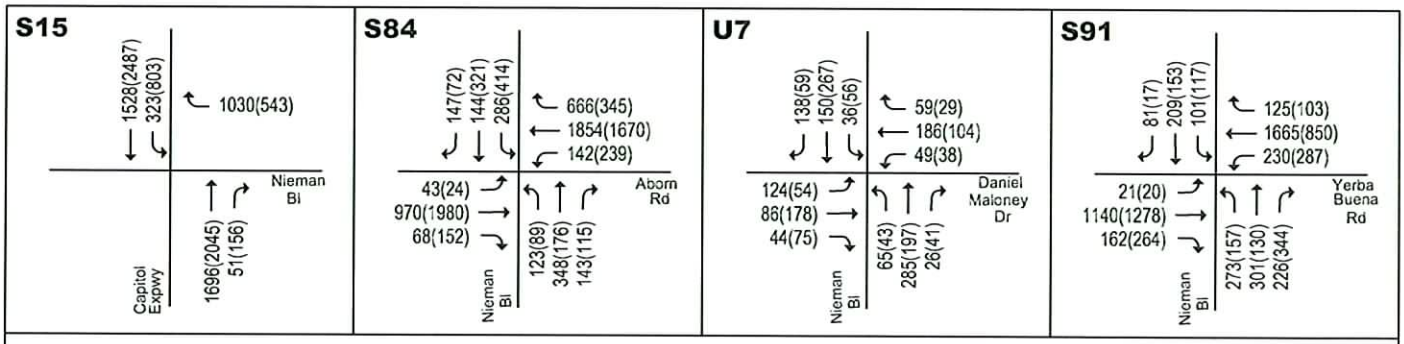
The following intersection was observed to have back-ups out of the turn pockets during peak hours.

Nieman Boulevard / Silver Creek Valley Road and Yerba Buena Road. During the AM peak hour, the queue of left-turn traffic on the westbound and northbound approaches occasionally spilled out of the turn pockets and to the adjacent through lane. Even so, the left-turn queues dissipated fully in each signal cycle.

Project Conditions

The following intersection is projected to have left turn queues longer than the existing turn pockets on one or more legs of the intersection.

Nieman Boulevard and Aborn Road. The turn pocket storage for southbound left turns is shown to be inadequate under background and project conditions. The southbound left turn pocket can be lengthened by removing the landscaped median. Then queued cars would be able to utilize the center two-way left turn lane.



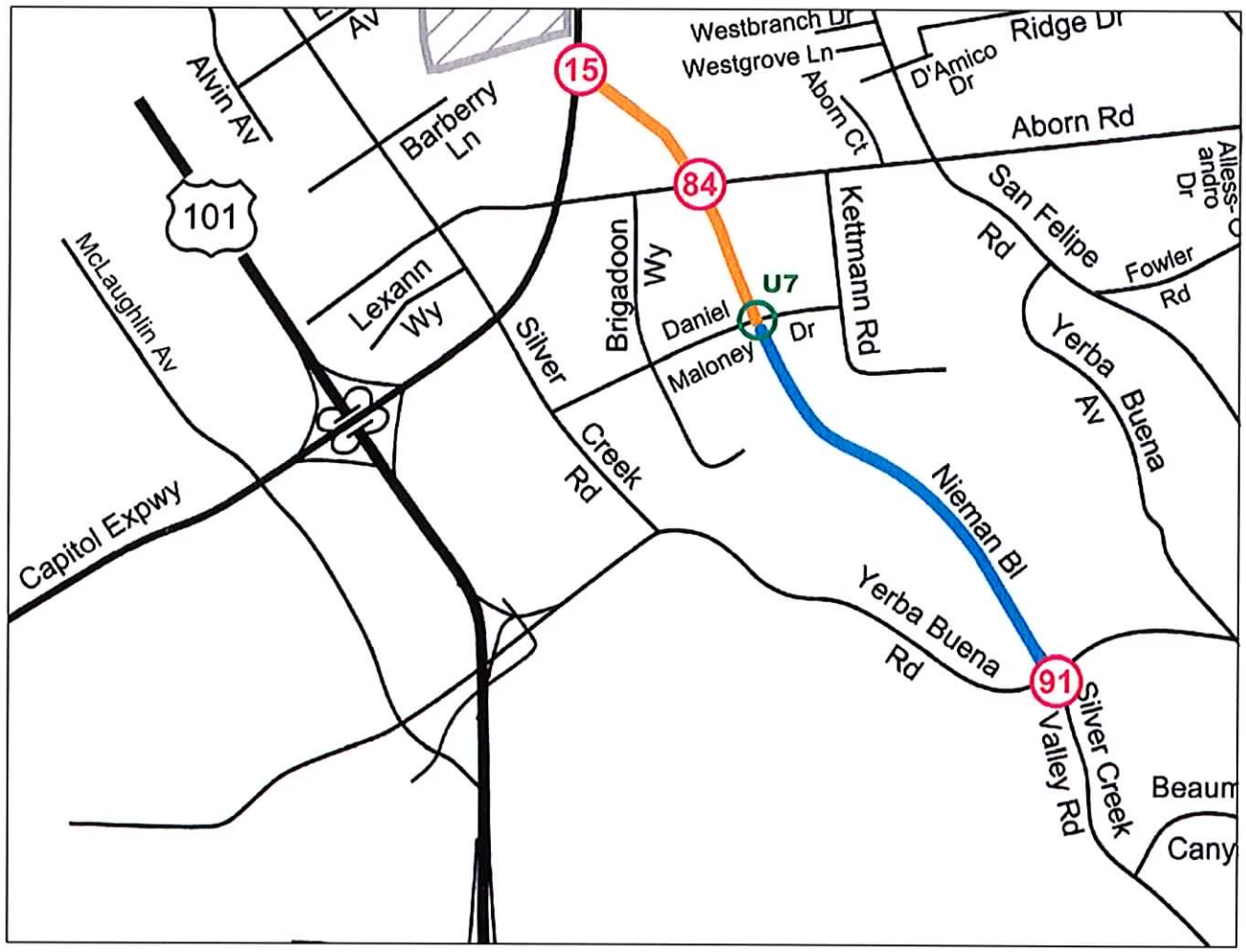


Figure 24

NIEMAN BOULEVARD PROJECT TRAFFIC VOLUMES SCENARIO V

Evergreen • East Hills Vision Strategy

Legend

XX(XX) = AM(PM) Peak-Hour Volumes

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Table 25
Nieman Boulevard Corridor Left-turn Storage Analysis

			Existing		Background				Project Conditions					
Intersection	Peak Hour	Mvmt.	# Lanes	Storage Per Lane	Proposed # Lanes	Storage Per Lane	Vehicle Queue	Required Storage Per Lane	Proposed # Lanes	Storage Per Lane	Vehicle Queue	Required Storage Per Lane	Comments on whether Proposed Left-Turn Storage Fulfills Length Requirements	
Nieman Boulevard and Aborn Road	AM	SBL	1	200	1	200	30	600	1	200	16	320	Inadequate -	SBL turn pocket may be extended by approximately 180 feet by removing median and landscaping. Further turn pocket lengthening to provide the required queue storage is not feasible without eliminating SBL into Everdale Drive.
	PM	SBL	1	200	1	200	18	360	1	200	25	500	Inadequate -	

Unsignalized Intersection Analysis

The unsignalized intersection of Nieman Blvd. and Daniel Maloney Drive was analyzed to see if signalization or other changes to traffic control would be warranted under existing or project conditions. The results of this analysis are summarized in Table 26.

This intersection is located where a major cross street intersects a General Plan street. A traffic signal is recommended at this intersection, as part of the Required Transportation Improvements. It is anticipated that signal warrants will be met at some time in the future. The existing four-way stop at this intersection was installed as an interim measure until funding could be obtained for a signal. The City generally seeks to avoid four-way stops on major streets because they cause unnecessary delay.

Table 26

Nieman Boulevard Corridor Signal Warrants Analysis

	Existing		Project Scenario V		
Intersection	AM Peak Warrant Met?	PM Peak Warrant Met?	AM Peak Warrant Met?	PM Peak Warrant Met?	Recommendations
Nieman Boulevard and Daniel Maloney Drive	No	No	No	No	Install signal

ITS Plan

Intelligent Transportation Systems, or ITS, is the use of communications and computer technology to increase the efficiency of traffic signals and reduce delays in the system. The City of San Jose has developed an ITS plan for the Evergreen area. The plan calls for traffic surveillance cameras and signal interconnect systems to be installed via cables, conduit, and trunk lines or wireless links where appropriate. Cameras are planned to be added to one intersection within the corridor:

Nieman Boulevard and Yerba Buena Road

The plan calls for new conduit and communication cables to be installed on Nieman Blvd. from Aborn Road to Daniel Maloney Drive and on Daniel Maloney Drive from Nieman Boulevard to Brigadoon Way. A wireless communication link will be installed on Silver Creek Valley Road (the continuation of Nieman Boulevard) from Yerba Buena Road to Country Club Parkway. The use of wireless links is planned in order to minimize the amount of trenching within the public right-of-way at the end of the communication link on Yerba Buena Road (see Figure 25).

Pedestrian and Bicycle Facilities

The corridor was evaluated for pedestrian and bicycle access. Recommendations for improvement are made where appropriate.

Pedestrians

Sidewalks run continuously on the east and west sides of Nieman Boulevard from Capitol Expressway to Yerba Buena Road. Bike lanes are present in both directions of travel along Yerba Buena Road from Capitol Expressway to Daniel Maloney Drive. There are no crosswalks or other special provisions for pedestrians around the James F. Smith Elementary School. The City may wish to consider adding some pedestrian features.

Bicycles

The City's plan calls for designating Nieman Boulevard a multi-modal street, which entails two through lanes, a center turn lane, bike lanes, and on-street parking. The City should consider adding the bicycle lanes on both sides of the street on the segment of Nieman from Daniel Maloney Drive to Yerba Buena Road (see Figure 25).

The EEHVS may fund either wholly or partially miscellaneous transportation improvement projects at to-be-determined locations in the Evergreen • East Hills area. Such improvements may include new traffic signals, new bicycle lanes and/or bicycle/pedestrian trails, traffic calming measures, intelligent transportation system (ITS) components, new/enhanced transit stops, transit shuttles, street curb ramps for wheelchair accessibility, new street trees, median landscaping, and new pedestrian overcrossings. The City may want to consider as a candidate for these funds adding bicycle lanes and on-street parking to the segments of Nieman that have yet to receive them.

Summary of Improvements

Project improvements to the Nieman Boulevard Corridor are as follows (see Figure 25):

Required Transportation Improvements

- Install a traffic signal at *Nieman Boulevard and Daniel Maloney Drive.*

Recommended Transportation Amenities

- Extend the southbound left turn pocket at *Nieman Boulevard and Aborn Road.*
- Install an ITS traffic camera system at the intersection of *Nieman Boulevard and Yerba Buena Road.* Install communication cables, conduit and wireless links as appropriate at Nieman Blvd/Yerba Buena Rd. and at Nieman Blvd./Daniel Maloney Dr.
- Consider using EEHVS miscellaneous transportation improvement funds to extend bicycle lanes and on-street parking on both sides of *Nieman Boulevard* from *Daniel Maloney Drive* to *Yerba Buena Road.*
- Consider a study of potential weekend traffic signal coordination on *Nieman Boulevard.*

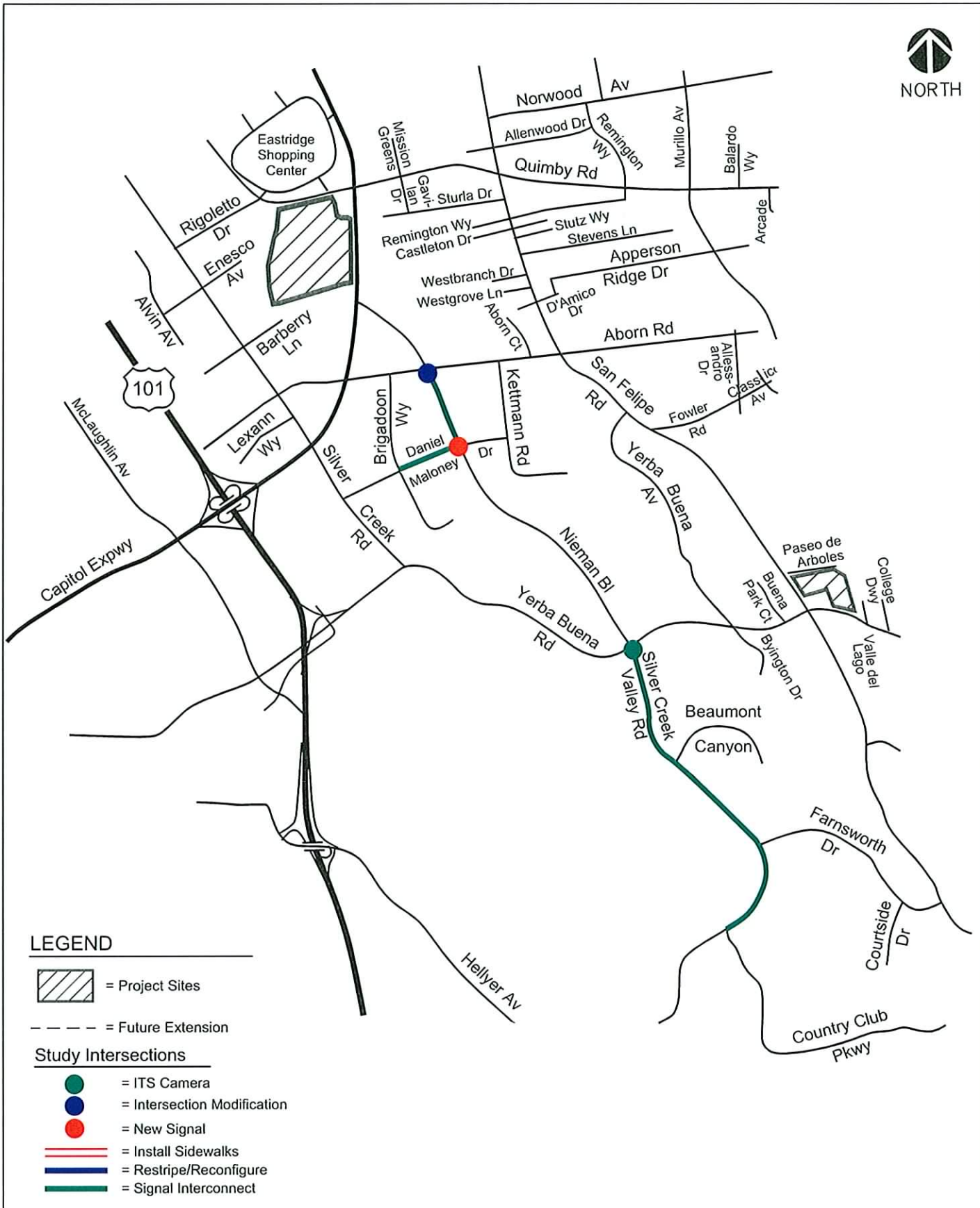

Figure 25

NIEMAN BOULEVARD CORRIDOR IMPROVEMENTS

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10.
Capitol Expressway Corridor (North of Quimby)

This chapter describes the transportation system in the Capitol Expressway Corridor, north of Quimby Rd., including roadway cross-section, signalized intersection operations, intersection queueing, and pedestrian and bicycle facilities. The Capitol Expressway Corridor in the Evergreen • East Hills area extends from the I-680 interchange southward approximately five miles to its intersection with McLaughlin Avenue (Figure 26). This chapter covers the part of Capitol Expressway north of Quimby Road. The reason for breaking Capitol Expressway into two sections is that this northern section will have the Light Rail Transit (LRT) extension, and the section south of Quimby Road will not.

Contents

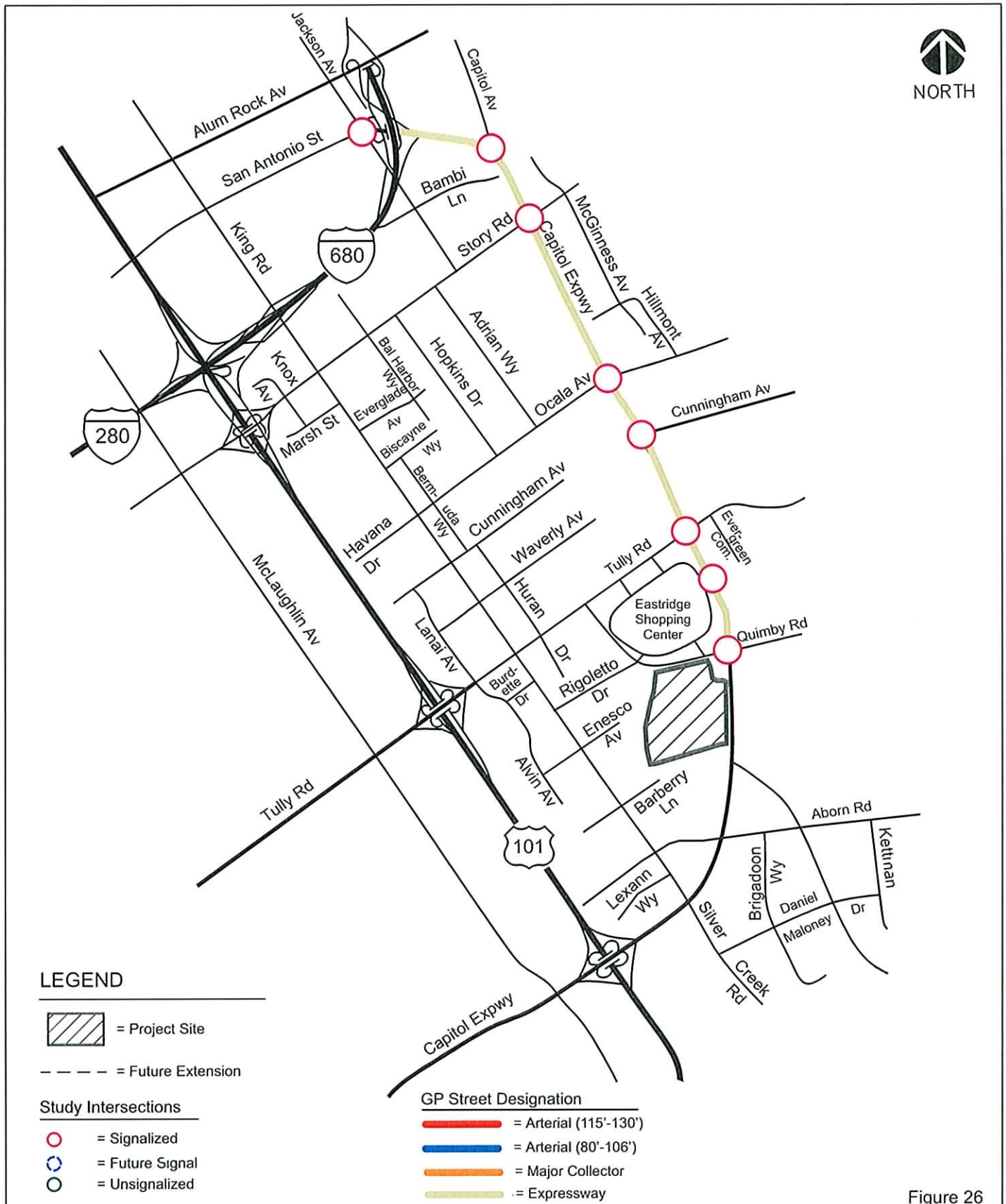

Figure 26

CAPITOL EXPRESSWAY QUIMBY AVENUE TO I-680 CORRIDOR

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Transportation Consultants, Inc.

Roadway Cross-Section

Capitol Expressway is designated an Expressway in the San Jose General Plan. However, City of San Jose standards do not apply because the expressway is owned and operated by Santa Clara County. Capitol Expressway from the I-680 interchange to Capitol Avenue has three lanes in each direction. From Capitol Avenue south to Quimby Road, Capitol Expressway has three through lanes and one HOV lane in each direction (see Figure 26). The HOV lanes are restricted to buses and cars with two or more occupants during peak AM and PM commute hours. At other times of the day, the lanes are open to any vehicles.

Traffic Operations

This section describes existing and future levels of service and queueing at signalized intersections. The intersections studied along the Capitol Expressway Corridor, north of Quimby Rd. are displayed in Figure 26 and are as follows:

Signalized Intersections Analyzed

- *Capitol Avenue and Capitol Expressway*
- *Capitol Expressway and Story Road*
- *Capitol Expressway and Ocala Avenue*
- *Capitol Expressway and Cunningham Avenue*
- *Capitol Expressway and Tully Road*
- *Capitol Expressway and Eastridge Mall*
- *Capitol Expressway and Quimby Road*

Planned / Background Improvements

On May 5th, 2005, the VTA Board of Directors approved the Final Environmental Impact Statement / Environmental Impact Report (EIS/EIR) for the Capitol Expressway Light Rail Project. This project is one element of the Downtown East Valley Transit Improvement Plan. Preliminary Engineering work for the Capitol Expressway Light Rail Project is underway. The project consists of a 3.1-mile light rail extension along Capitol Expressway from the existing Alum Rock Station (at the end of the Capitol Light Rail extension) to the future Nieman Boulevard Station. Light rail will operate primarily in the median of Capitol Expressway as part of a multi-modal transportation corridor with improved transit, pedestrian and bicycle access. Four new stations will be located near Story Road, Ocala/Cunningham Avenues, Eastridge Transit Center, and Nieman Boulevard. A primary funding source for the project will be sales tax revenues from Measure A that was approved by voters on November 7, 2000.

The Capitol Expressway Light Rail Project will result in changes to the existing lane configuration of several study intersections. Along the length of the corridor, the HOV lane on Capitol Expressway will be removed for a total of three through lanes on the north and south approaches. Additionally, at the intersection of Capitol Expressway and Ocala Avenue, the northbound left-turn movement would be reduced from two lanes to a single lane to make room for the Ocala-Cunningham light rail station.

The Capitol Expressway Light Rail Project will improve pedestrian travel in the corridor by constructing sidewalks where they are currently missing to provide a continuous walkway along both sides of Capitol Expressway.

In addition to the Capitol LRT project, the following background improvement is planned and funded for Capitol Expressway.

Capitol Expressway and Story Road. Add a third eastbound through lane and a second westbound left-turn lane. (Developer-funded)

Required Transportation Improvements

The proposed project includes numerous improvements to the surrounding transportation network including improvements to freeways, expressways, and local streets. The following improvements to Capitol Expressway would be fully funded by the project:

Intersection Improvements

Capitol Expressway / Quimby Road. Add a second left-turn lane on the eastbound approach. All work will occur within the existing right-of-way.

Project Volumes

Turning movement volumes under project conditions at studied intersections in the corridor are shown in Figure 27.

Level of Service Analysis

The results show that four of the seven signalized intersections along this section of Capitol Expressway would operate worse than the City of San Jose LOS D standard (Table 27):

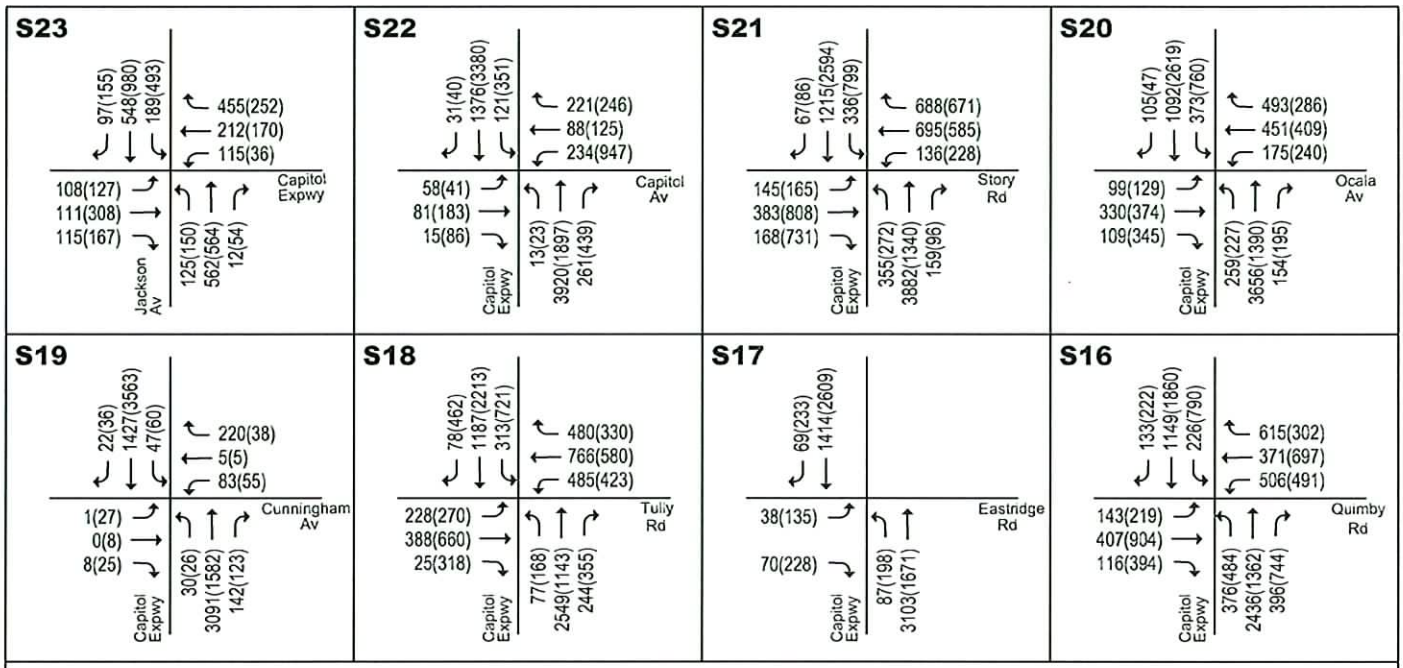
Capitol Expressway at Capitol Avenue

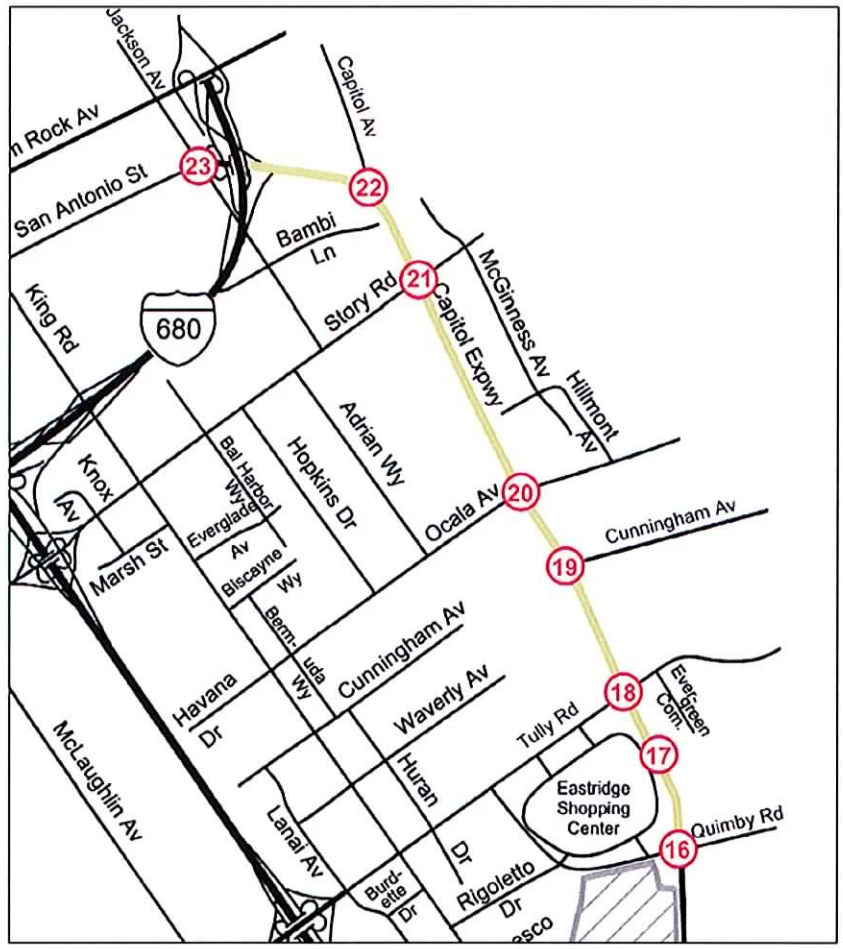
Capitol Expressway at Story Road

Capitol Expressway at Ocala Avenue

Capitol Expressway at Quimby Road

Under existing conditions, three of these intersections operate worse than the City's LOS D standard. All other signalized study intersections along Capitol Expressway north of Quimby Rd. are expected to operate at LOS D or better.





NORTH

Figure 27

CAPITOL EXPWY QUIMBY AVENUE TO I-680 PROJECT TRAFFIC VOLUMES SCENARIO V

Evergreen • East Hills Vision Strategy

Legend

XX(XX) = AM(PM) Peak-Hour Volumes

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Table 27

Capitol Expressway Corridor, North of Quimby Rd. Level of Service Analysis

Intersection	Existing AM Delay	Existing AM LOS	Existing PM Delay	Existing PM LOS	Background AM Delay	Background AM LOS	Background PM Delay	Background PM LOS	Project V AM Delay	Project V AM LOS	Project V PM Delay	Project V PM LOS
Capitol Expressway and Capitol Avenue	24.9	C	55.6	E	25.3	C	53.1	D	41.8	D	71.9	E
Capitol Expressway and Story Road	60.0	E	54.9	D	47.2	D	53.6	D	121.6	F	79.3	E
Capitol Expressway and Ocala Avenue	49.7	D	47.9	D	53.8	D	51.9	D	84.1	F	54.9	D
Capitol Expressway and Cunningham Avenue	11.7	B	8.8	A	11.9	B	9.3	A	13.4	B	10.0	B
Capitol Expressway and Tully Road	40.3	D	41.5	D	37.3	D	45.4	D	48.5	D	51.5	D
Capitol Expressway and Eastridge	6.5	A	9.1	A	8.5	A	12.4	B	7.3	A	10.8	B
Capitol Expressway and Quimby Road	42.8	D	57.0	E	45.8	D	77.8	E	70.8	E	122.9	F

Project Impacts

The results show that, according to the City of San Jose's level of service standards for signalized intersections, the following intersections would be significantly impacted by the project scenario during the AM and PM peak hours.

Capitol Expressway and Capitol Avenue

Impact: This intersection is expected to operate at LOS D during the PM peak hour under background conditions. The added trips as a result of the Evergreen • East Hills Vision Strategy would cause the intersection level of service to degrade to LOS E. Based on the City of San Jose's level of service impact criteria, this constitutes a significant impact.

Mitigation: There are no feasible mitigation measures at this intersection. A fourth southbound through lane would be needed on Capitol Expressway in order to achieve an acceptable level of service. Constructing this improvement would require widening Capitol Expressway by approximately 11 feet beginning approximately 500 feet west of Capitol Avenue and extending approximately 500 feet east of Capitol Avenue. A segment of Capitol Avenue beginning approximately 400 feet east of Excalibur Drive would have to be shifted westward to accommodate the widening of Capitol Expressway. Acquiring the additional right-of-way necessary for this improvement would involve the purchase of three single-family residential properties, including two properties that back up to Capitol Expressway west of Excalibur Drive and one property at the southeast corner of Excalibur Drive and Capitol Avenue.

Capitol Expressway and Story Road

Impact: This intersection is expected to operate at LOS D during the AM and PM peak hours under background conditions. The added trips as a result of the Evergreen • East Hills Vision Strategy would cause the intersection level of service to degrade to an unacceptable level (LOS E or LOS F) during both the AM and PM peak hours. Based on the City of San Jose's level of service impact criteria, this constitutes a significant impact.

Mitigation: There are no feasible mitigation measures at this intersection. Achieving an acceptable level of service would require adding a fourth through lane on northbound Capitol Expressway and providing free-running right-turns on both the eastbound and westbound approaches of Story Road. Such improvements would require extensive widening of Capitol Expressway, right-of-way acquisition, and modifications to other roadways that front Capitol Expressway. Additional right-of-way approximately 11 feet in width would be needed on the east side of Capitol Expressway from Sussex Drive (approximately 600 feet south of Story Road) to Story Road. The widening of Capitol Expressway along this segment would necessitate converting Kollmar Drive into a cul-de-sac. The acquisition of the necessary right-of-way would reduce the landscaping and parking areas on the commercial property on the southeast quadrant of the Capitol/Story intersection. North of Story Road, additional right-of-way approximately 22 feet in width would be needed along the east side of Capitol Expressway for a distance of approximately 220 feet, reducing the landscaping and parking area on the commercial property on the northeast corner. North of this point, the widening of Capitol Expressway would require shifting the Capitol Expressway frontage road farther east. This would entail acquiring additional right-of-way beginning at 22 feet in width and narrowing to 11 feet in width. At least one of the three buildings adjacent this frontage road would have to be demolished. The fourth northbound through lane could be extended to Capitol Avenue without impacting any properties north of Mervyn's Way. Roadway widening and additional right-of-way approximately 11 feet in width also would be necessary on the west side of Capitol Expressway south of Story Road for a distance of approximately 500 feet. The right-of-way acquisition on this quadrant would reduce the landscaping and parking on the commercial property at the corner and impact at least one single-family residential property that backs up to Capitol Expressway.

Capitol Expressway and Ocala Avenue

Impact: This intersection is expected to operate at LOS D during the AM peak hour under background conditions. The added trips as a result of the Evergreen • East Hills Vision Strategy would cause the intersection level of service to degrade to LOS E. Based on the City of San Jose's level of service impact criteria, this constitutes a significant impact.

Mitigation: There are no feasible mitigation measures at this intersection. A fourth through lane would be needed on northbound Capitol Expressway in order to achieve an acceptable level of service. Such an improvement would require widening the roadway by approximately 11 feet both north and south of Ocala Avenue for a total distance of approximately 1,000 feet. Acquiring the additional right-of-way necessary for this improvement would involve the purchase of a total of 13 single-family residential properties, including 9 south of Ocala Avenue and 4 north of Ocala Avenue.

Capitol Expressway and Quimby Road

Impact: The addition of project-generated trips during the AM peak hour would cause the intersection level of service to degrade from LOS D under background conditions to LOS E under project conditions. During the PM peak hour, this intersection is expected to operate at LOS E under background conditions. The added trips as a result of the Evergreen • East Hills Vision Strategy would cause the critical-movement delay to increase by four or more seconds and the V/C ratio to increase by .01 or more. Based on the City of San Jose's level of service impact criteria, this constitutes a significant impact.

Mitigation: The significant project impact at this intersection could be mitigated by adding a northbound right-turn lane and an eastbound right-turn lane. This improvement would require roadway widening and the acquisition of approximately two feet of additional right-of-way along Quimby Road on the southwest quadrant and along Capitol Expressway on the southeast quadrant. Based on the City's standards, the proposed improvement would satisfactorily mitigate the project impact.

Queueing

The adequacy of left turn pocket storage was evaluated for four signalized intersections in the corridor. The number of vehicles in queue was calculated using the TRAFFIX queue length software. Queue lengths in feet were calculated assuming 20 feet per vehicle. Table 28 summarizes the queueing findings.

Existing Conditions

The following intersections were observed to have back-ups out of the turn pockets during peak hours.

Capitol Expressway and Capitol Avenue. During the PM peak hour, the southbound queue occasionally extends past the I-680 northbound off ramp making it difficult for vehicles to merge onto Capitol Expressway from I-680.

Capitol Expressway and Story Road. During the AM peak hour, the southbound left-turn queue often does not clear in a single signal cycle. During the PM peak hour vehicle queues on eastbound Story Road regularly extend past the unsignalized intersection at Galahad Avenue and through the next intersection at Leeward Avenue; not all vehicles clear during the signal cycle (i.e., some vehicles wait longer than one cycle). The queues block access to the eastbound left- and right-turn pockets. On the westbound approach, left-turn traffic often overflows the turn pocket.

Capitol Expressway and Ocala Avenue. During the AM peak hour, the queue in the westbound right-turn lane on Ocala Avenue occasionally extends past Evermont Court, blocking vehicles from existing and entering this street. However, few vehicles were observed trying to make these movements.

Capitol Expressway and Quimby Road. During the AM peak hour, the westbound left-turn pocket regularly overflows. The queue takes multiple signal cycles to clear. During the PM peak hour, the southbound left-turn queue occasionally does not clear during the leading left-turn phase (the interval preceding the northbound through phase). However, the queue is fully discharged later in the same cycle during the lagging left-turn phase (the interval following the northbound through phase).

Project Conditions

The following intersections are projected to have left turn queues longer than the existing turn pockets on one or more legs of the intersection.

Capitol Expressway and Capitol Avenue. The storage pockets for vehicles turning left from southbound Capitol Avenue to southbound Capitol Expressway would be inadequate under background and project conditions. The queue would block access to the separate right turn lane. However, the turn lanes cannot be lengthened due to the planned LRT line.

Table 28
Capitol Expressway Corridor, North of Quimby Rd. Left-turn Storage Analysis

			Existing		Background				Project Conditions					
									Proposed			Required		
Intersection	Peak Hour	Mvmt.	# Lanes	Storage Per Lane	Proposed # Lanes	Storage Per Lane	Vehicle Queue	Required Storage Per Lane	# Lanes	Storage Per Lane	Vehicle Queue	Storage Per Lane	Comments on whether Proposed Left-Turn Storage Fulfills Length Requirements	
Capitol Expressway and Capitol Avenue	AM	WBLT	3	440	3	440	24	160	3	440	25	180	Adequate	
	PM	WBLT	3	440	3	440	75	500	3	440	80	540	Inadequate -	WBL turn storage consists of 2 lefts and 1 shared left/through. WBL queues beyond 100 feet block WBR. Providing additional left-turn storage is not feasible with planned Capitol Expressway LRT.
Capitol Expressway and Story Road	AM	SBL	2	440	2	440	22	220	2	440	26	260	Adequate	
	PM	SBL	2	440	2	440	40	400	2	440	52	520	Inadequate	SBL turn pocket may be extended to provide the necessary storage by removing median and landscaping
	AM	NBL	2	320	2	320	17	180	2	320	24	240	Adequate	
	PM	NBL	2	320	2	320	17	180	2	320	23	240	Adequate	
Capitol Expressway and Tully Road	AM	SBL	2	380	2	380	17	180	2	380	24	240	Adequate	
	PM	SBL	2	380	2	380	36	360	2	380	48	480	Inadequate -	Extending SBL turn pocket may not be feasible with planned Capitol Expressway LRT.
	AM	WBL	2	210	2	210	28	280	2	210	34	340	Inadequate	WBL turn pocket may be extended to provide the necessary storage by removing median and landscaping
	AM	WBL	2	210	2	210	25	260	2	210	33	340	Inadequate	
Capitol Expressway and Quimby Road	AM	SBL	2	400	2	400	15	160	2	400	18	180	Adequate	
	PM	SBL	2	400	2	400	50	500	2	400	60	600	Inadequate	SBL turn pocket may be extended by approximately 100 feet by removing median and landscaping. Further turn pocket lengthening to provide the required queue storage is not feasible due to the NBL turn pocket at Eastridge Mall.
	AM	WBL	2	200	2	200	32	320	2	200	35	360	Inadequate	Improvements to increase storage are not feasible since it would require additional ROW.
	PM	WBL	2	200	2	200	32	320	2	200	40	400	Inadequate	
	AM	NBL	2	310	2	310	23	240	2	310	26	260	Adequate	
	PM	NBL	2	310	2	310	31	320	2	310	39	400	Inadequate	NBL turn pocket may be extended to provide the necessary storage by removing median and landscaping.
	AM	EBL	1	180	1	180	1	20	2	280	7	80	Adequate	
	PM	EBL	1	180	1	180	6	120	2	280	18	180	Adequate	

Capitol Expressway and Story Road. The southbound left turn storage would be inadequate under project conditions. The southbound left turn pockets could be lengthened by cutting into the landscaped median.

Capitol Expressway and Tully Road. Storage for the westbound left turn would be inadequate under background and project conditions. The left turn pocket could be lengthened by cutting into the landscaped median. Storage for the southbound left turn would be inadequate under project conditions. It may or may not be possible to extend the southbound left turn pocket depending on the future LRT design on Capitol Expressway.

Capitol Expressway and Quimby Road. The northbound, southbound, and westbound left turn pockets would be inadequate under background and project conditions. The westbound pocket cannot be lengthened due to right-of-way constraints. The southbound pocket would need to be lengthened by 200 feet; however, only 100 feet are possible due to an adjacent turn pocket. The northbound pocket can be lengthened the required 90 feet by cutting into the median.

ITS Plan

Intelligent Transportation Systems, or ITS, is the use of communications and computer technology to increase the efficiency of signal operations and reduce delays in the system. The City of San Jose has developed an ITS plan for the Evergreen area. The plan calls for traffic surveillance cameras and signal interconnect systems to be installed via cables, conduit, and trunk lines or wireless links where appropriate. Cameras are planned to be added to four intersections within the corridor:

Capitol Expressway and Story Road

Capitol Expressway and Ocala Avenue

Capitol Expressway and Tully Road

Capitol Expressway and Quimby Road

The ITS Plan calls for a cable signal interconnect to be installed on Capitol Expressway from Capitol Avenue to Quimby Road, to connect to the City's ITS system. (see Figure 28).

Pedestrian and Bicycle Facilities

The corridor was evaluated for pedestrian and bicycle access. Recommendations for improvement are made where appropriate.

Pedestrians

Under existing conditions there are no sidewalks on Capitol Expressway. However, continuous sidewalks on both sides of the expressway will be built as part of the LRT project.

Bicycles

There are no bike lanes on Capitol Expressway. However, the expressway has wide shoulders on both sides of the street, and bikes are allowed to use them.

Summary of Improvements

Project improvements to the Capitol Expressway Corridor, north of Quimby Road are as follows (see Figure 28):

Required Transportation Improvements

- Add a second left-turn lane on the eastbound approach at the *Capitol Expressway / Quimby Road* intersection.

Recommended Transportation Amenities

- Lengthen the southbound left turn pockets at the *Capitol Expressway and Story Road* intersection.

- Lengthen the westbound left turn pocket at the *Capitol Expressway and Tully Road* intersection. Storage for the southbound left turn would be inadequate under project conditions. It may or may not be possible to extend the southbound left turn pocket depending on the future LRT design on Capitol Expressway.

- Lengthen the northbound left turn pocket 90 feet at the *Capitol Expressway / Quimby Road* intersection. Lengthen the southbound pocket by 100 feet.

- Install ITS camera systems at the intersections of *Capitol Expressway with Story Road, Tully Road, Ocala Avenue, and Quimby Road.* Install conduit, communication cable, and wireless interconnects as appropriate.

- Consider a study of potential weekend traffic signal coordination on *Capitol Expressway,* north of Quimby Road.

Mitigation from EIR

- At the *Capitol Expressway and Quimby Road* intersection add a northbound right-turn lane and an eastbound right-turn lane. This improvement would require roadway widening and the acquisition of approximately two feet of additional right-of-way along Quimby Road on the southwest quadrant and along Capitol Expressway on the southeast quadrant.

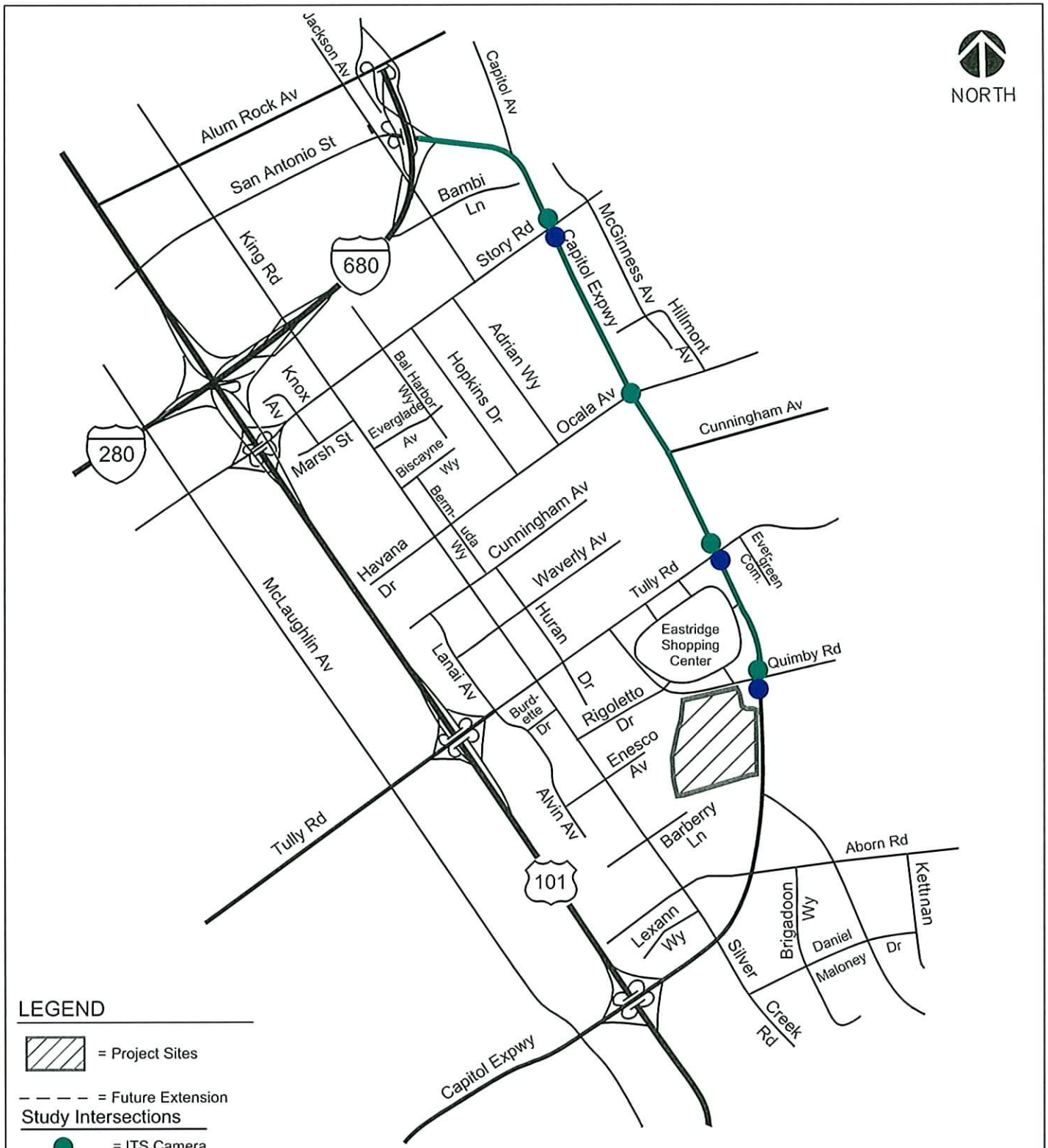

Figure 28

CAPITOL EXPRESSWAY QUIMBY AVENUE TO I-680 CORRIDOR IMPROVEMENTS

Evergreen • East Hills Vision Strategy

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11.
Capitol Expressway Corridor (South of Quimby)

This chapter describes the transportation system in the Capitol Expressway Corridor, south of Quimby Rd., including roadway cross-section, signalized intersection operations, intersection queueing, freeway interchange operations, and pedestrian and bicycle facilities. The Capitol Expressway Corridor in the Evergreen • East Hills area extends from the I-680 interchange southward approximately five miles to its intersection with McLaughlin Avenue (Figure 29). This chapter covers the part of Capitol Expressway south of Quimby Road. The reason for breaking Capitol Expressway into two sections is that the northern section will have the Light Rail Transit (LRT) extension, and the southern section will not. This section of the Capitol Expressway Corridor provides access to the Arcadia Property development, at the southwest section of the Capitol Expressway and Quimby Road intersection.

Contents

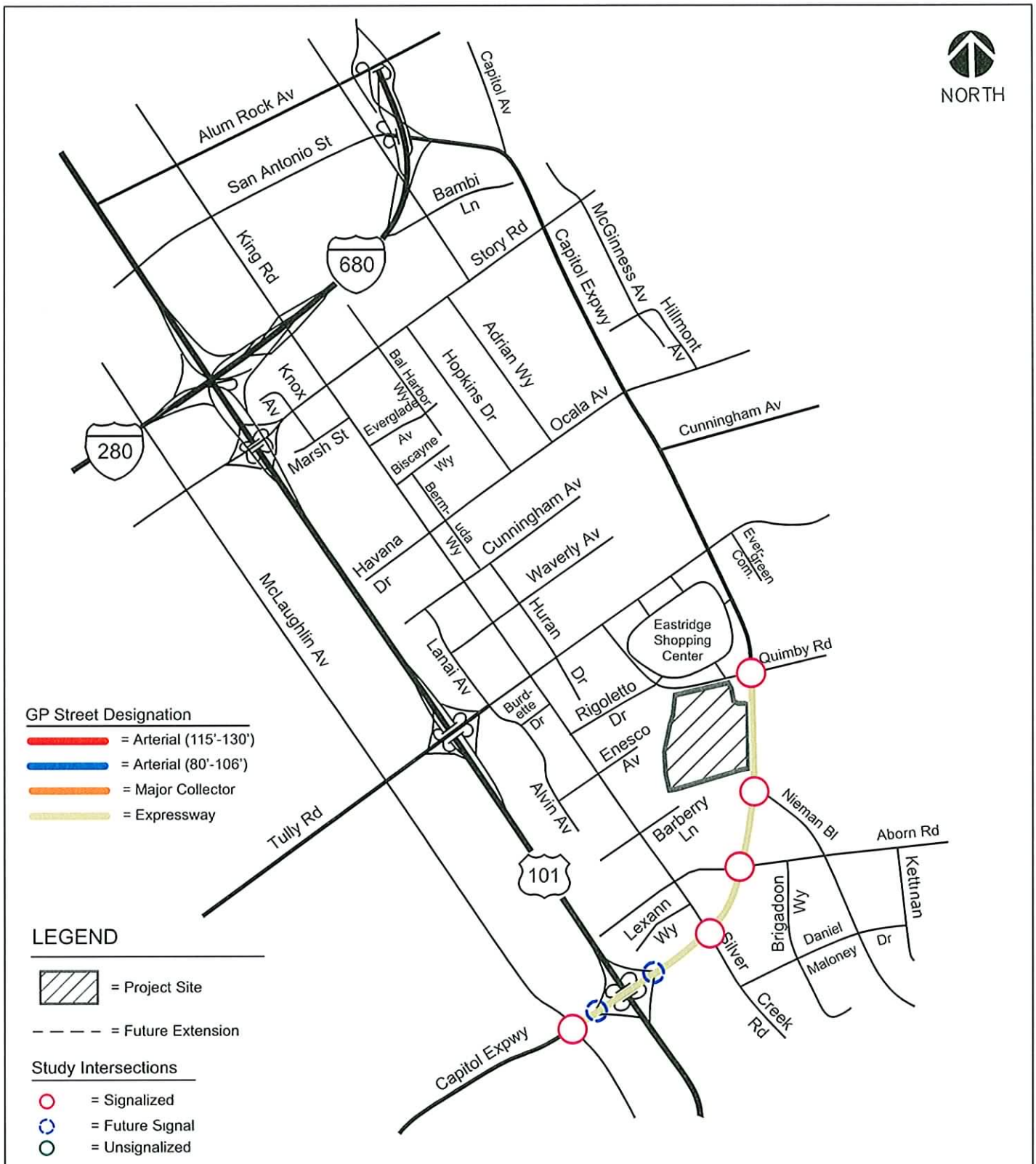

Figure 29

CAPITOL EXPRESSWAY QUIMBY AVENUE TO US-101 CORRIDOR

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Roadway Cross-Section

Capitol Expressway is designated an Expressway in the San Jose General Plan. However, City of San Jose standards do not apply because the expressway is owned and operated by Santa Clara County. From Quimby Road south to Aborn Road, Capitol Expressway has three through lanes and one HOV lane in each direction (see Figure 29). The HOV lanes are restricted to buses and cars with two or more occupants during peak AM and PM commute hours. At other times of the day, the lanes are open to any vehicles. The HOV lanes stop before Silver Creek Road, and Capitol Expressway has four through lanes in each direction from Silver Creek Road to U.S. 101. From U.S. 101 to McLaughlin Avenue Capitol Expressway has three lanes in each direction.

Traffic Operations

This section describes existing and future levels of service and queueing at signalized intersections. It also includes a description of traffic operations at the Capitol Expressway / U.S. 101 interchange. The intersections studied along the Capitol Expressway Corridor, south of Quimby Rd. are displayed in Figure 29 and are as follows:

Signalized Intersections Analyzed

- *McLaughlin Avenue and Capitol Expressway*
- *U.S. 101 and Capitol Expressway (W) (Future)*
- *U.S. 101 and Capitol Expressway (E) (Future)*
- *Silver Creek Road and Capitol Expressway*
- *Aborn Road and Capitol Expressway*
- *Nieman Boulevard and Capitol Expressway*

Planned / Background Improvements

The following improvements are planned and funded under background conditions and will occur with or without the project.

Capitol Expressway LRT Project. The planned and funded LRT extension project ends just south of Quimby Road. There are no changes planned to the section of Capitol Expressway south of Quimby Road.

Capitol Expressway and Aborn Road. Add a second eastbound left-turn lane and a third westbound left-turn lane. (Developer funded)

Required Transportation Improvements

The proposed project includes numerous improvements to the surrounding transportation network including improvements to freeways, expressways, and local streets. The following improvements on Capitol Expressway south of Quimby Road would be fully funded by the project:

Improvements to Capitol Expressway between Quimby Road and U.S. 101

The existing HOV lanes on Capitol Expressway between U.S. 101 and Nieman Boulevard will be converted to mixed-flow lanes, meaning that their use during the weekday peak commute periods will no longer be restricted to vehicles with two or more occupants. With this project-sponsored improvement, Capitol Expressway will have four through lanes and a separate right-turn lane in each direction at the Nieman/Capitol, Aborn/Capitol and Silver Creek/Capitol intersections. Though the removal of the HOV lanes would be a required transportation improvement, the timing of this improvement would be coordinated with the LRT project. [Note: Independent of this project, the HOV lanes on Capitol Expressway between Nieman Boulevard and I-680 will be removed in order to construct the planned Capitol Expressway Light Rail Project.]

Other improvements on Capitol Expressway between U.S. 101 and Quimby Road will consist of the addition of sidewalks, landscaping of the median, the addition of streetlights, the planting of trees, and traffic signal upgrade/modification. All work will occur within the existing right-of-way.

Intersection Improvements

Project-sponsored improvements at signalized study intersections are described below.

Capitol Expressway / Aborn Road. Add a second left-turn lane on the northbound approach. All work will occur within the existing right-of-way.

Silver Creek Road / Capitol Expressway. Widen the curb lane on the westbound receiving leg of Capitol Expressway to eliminate impedance to westbound through traffic caused by vehicles turning into the adjacent shopping center. Extend the eastbound left-turn pocket. Additional right-of-way will be required.

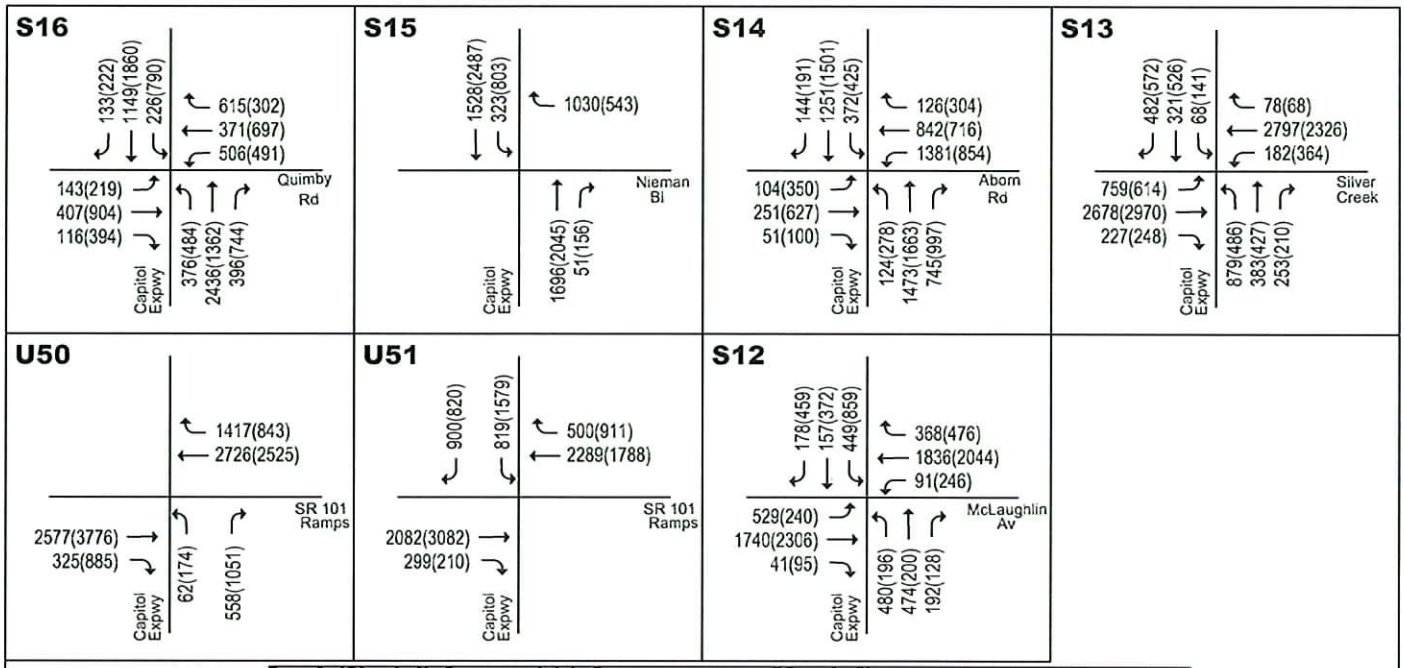
McLaughlin Avenue / Capitol Expressway. Add a second left-turn lane on the northbound and southbound approaches. Modify the phasing of the existing traffic signal to provide protected left turns on the northbound and southbound approaches. All work will occur within the existing right-of-way.

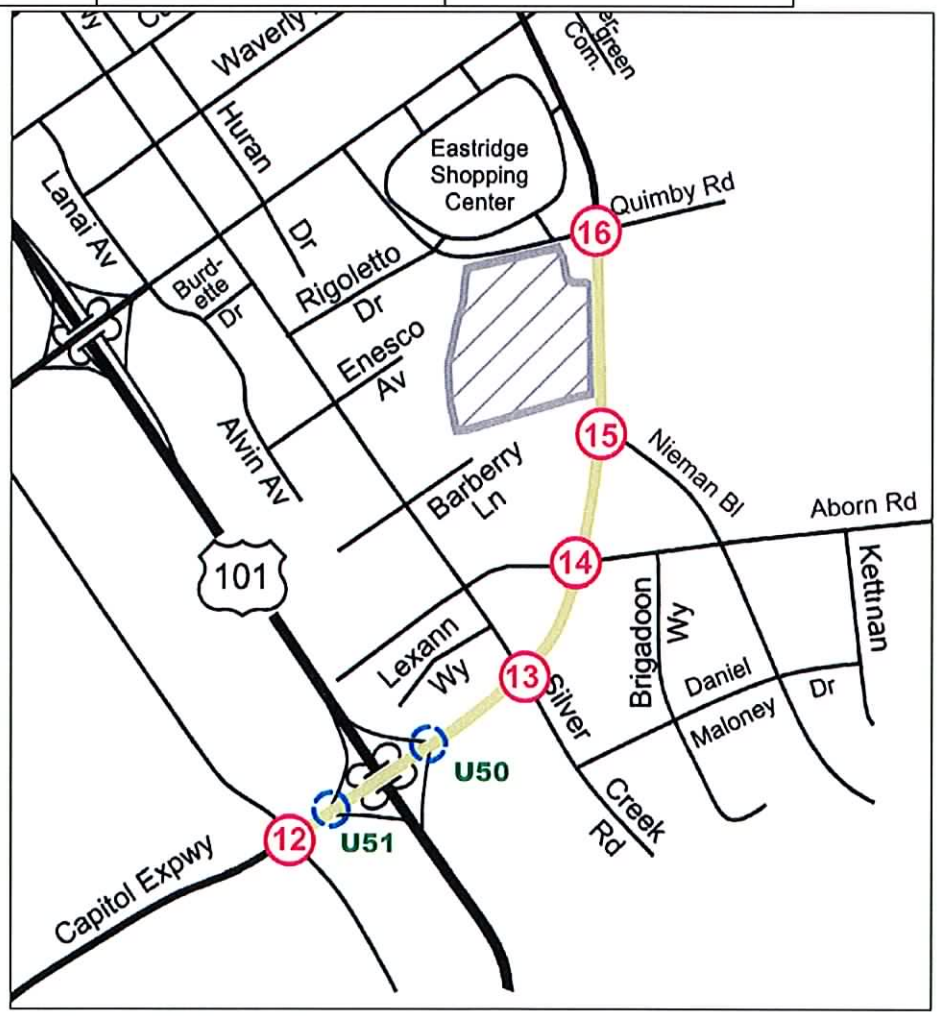
Project Volumes

Turning movement volumes under project conditions at studied intersections in the corridor are shown in Figure 30.

Level of Service Analysis

The results show that the intersection of Silver Creek Road and Capitol Expressway would operate at LOS E during the AM peak hour under project conditions (see Table 29). This intersection operates at LOS E also under existing conditions. The other four existing or planned signalized intersections along this section of Capitol Expressway will operate at LOS D or better.





NORTH

Figure 30

CAPITOL EXPWY QUIMBY AVENUE TO US-101 PROJECT TRAFFIC VOLUMES SCENARIO V

Legend

XX(XX) = AM(PM) Peak-Hour Volumes

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Table 29

Capitol Expressway Corridor, South of Quimby Rd. Level of Service Analysis

Intersection	Existing AM Delay	Existing AM LOS	Existing PM Delay	Existing PM LOS	Background AM Delay	Background AM LOS	Background PM Delay	Background PM LOS	Project V AM Delay	Project V AM LOS	Project V PM Delay	Project V PM LOS
McLaughlin Avenue and Capitol Expressway	46.1	D	44.9	D	46.9	D	48.6	D	44.4	D	48.4	D
U.S. 101 and Capitol Expressway (W) (Future)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	18.5	B	21.4	C
U.S. 101 and Capitol Expressway (E) (Future)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	10.6	B	31.5	C
Silver Creek Road and Capitol Expressway	60.3	E	52.4	D	50.8	D	51.5	D	67.4	E	52.6	D
Aborn Road and Capitol Expressway	41.9	D	48.0	D	39.8	D	50.2	D	42.0	D	52.5	D
Nieman Boulevard and Capitol Expressway	11.5	B	23.5	C	40.8	D	27.0	C	33.7	C	25.7	C

Project Impacts

The results show that, according to the City of San Jose's level of service standards for signalized intersections, the following intersection would be significantly impacted by the project scenario during the AM and PM peak hours.

Silver Creek Road and Capitol Expressway

Impact: This intersection is expected to operate at LOS D during the AM peak hour under background conditions. The added trips as a result of the Evergreen • East Hills Vision Strategy would cause the intersection level of service to degrade to LOS E. Based on the City of San Jose's level of service impact criteria, this constitutes a significant impact.

Mitigation: Improvements beyond the proposed project-sponsored improvements are not feasible. Intersection operations would be improved to LOS D by the addition of a fifth westbound through lane and a third eastbound left-turn lane on Capitol Expressway. In addition, a third lane would have to be added on the northbound receiving leg of Silver Creek Road to receive the triple left-turn movement. Such improvements would require acquiring 12 feet of additional right-of-way along the east side of Silver Creek Road from Capitol Expressway to Aborn Road, a distance of approximately 1,400 feet. Additional right-of-way varying in width from 4 to 11 feet would also be needed on the north side of Capitol Expressway beginning east of Silver Creek Road and extending to US 101 for a total distance of approximately 2,100 feet. The necessary right-of-way acquisition would have an adverse effect on the adjacent properties resulting in a loss of landscaping and the elimination of a row of parking spaces. Alternatively, restriping the northbound approach to include two left-turn lanes, one shared left-turn/through lane, one through lane, and one right-turn lane and implementing split-phase signal control for the north and south approaches would theoretically result in LOS D. However, the proximity of U.S. 101 and the freeway interchange design would cause unbalanced usage of the triple left-turn lanes making such a modification ineffective.

Queueing

The adequacy of left turn pocket storage was evaluated for two signalized intersections in the corridor. The number of vehicles in queue was calculated using the TRAFFIX queue length software. Queue lengths in feet were calculated assuming 20 feet per vehicle. Table 30 summarizes the queueing findings.

Existing Conditions

The following intersections were observed to have back-ups out of the turn pockets during peak hours.

Silver Creek Road and Capitol Expressway. During the morning commute hours, the heaviest traffic flows occur on those movements leading toward U.S. 101. The ramp meter at the northbound U.S. 101 on ramp causes slow-moving queues in the far right lane of westbound Capitol Expressway. During the AM peak hour, the queue extends through the Silver Creek/Capitol intersection and continues to Aborn Road. This causes delays for traffic attempting to turn right onto westbound Capitol Expressway from southbound Silver Creek Road. The queue on southbound Silver Creek Road does not dissipate in one signal cycle and often blocks access to driveways serving the adjacent shopping center. Similarly, traffic on northbound Silver Creek Road backs up to Daniel Maloney Drive. The left-turn queue spills out of the turn pocket; however, all vehicles clear during each signal cycle.

During the evening commute hours, the peak direction of travel on Capitol Expressway is eastbound (away from U.S. 101). The eastbound approach at the Silver Creek/Capitol intersection experiences long queues that extend over the freeway overpass. The queue in the eastbound through lanes clears the intersection during every signal cycle. Eastbound traffic turning left onto northbound Silver Creek Road regularly overflows the turn pocket and experiences some phase failures (signal cycles in which the queue does not fully dissipate). The majority of vehicles in the inside left-turn lane make u-turns. The large number of vehicles making u-turns significantly slows the flow of traffic out of the turn pocket. Furthermore, left turn traffic on this approach is slowed by vehicles turning into the adjacent shopping center. Westbound traffic accessing the Target/gas station driveway on Capitol Expressway, south of Silver Creek Road, occasionally blocks westbound through traffic, creating long queues that block the intersection.

Capitol Expressway and Aborn Road. In the AM peak hour, the westbound left-turn queue regularly spills out of the turn pocket during each signal cycle blocking the adjacent through lane. All vehicles clear during each signal cycle. In the PM peak hour the southbound left-turn queue regularly spills out of the turn pocket but all vehicles clear during each signal cycle.

Project Conditions

The following intersections are projected to have left turn queues longer than the existing turn pockets on one or more legs of the intersection.

Silver Creek Road and Capitol Expressway. The westbound left turn queue would back up out of the pocket by 40 feet under project conditions. If desired, the turn pocket could be extended by cutting into the landscaped median. The northbound left turn pockets are shown to be inadequate under background and project conditions. To fully accommodate the estimated queue, the pockets would need to be lengthened by 380 feet. There is room to lengthen them by 250 feet by cutting into the landscaped median. Further lengthening is precluded by an adjacent left turn pocket.

Table 30
Capitol Expressway Corridor, South of Quimby Rd. Left-turn Storage Analysis

			Existing		Background				Project Conditions					
Intersection	Peak Hour	Mvmt.	# Lanes	Storage Per Lane	Proposed # Lanes	Storage Per Lane	Vehicle Queue	Required Storage Per Lane	Proposed # Lanes	Storage Per Lane	Vehicle Queue	Required Storage Per Lane	Comments on whether Proposed Left-Turn Storage Fulfills Length Requirements	
Silver Creek Road and Capitol Expressway	AM	WBL	2	260	2	260	13	140	2	260	14	140	Adequate	
	PM	WBL	2	260	2	260	26	260	2	260	29	300	Inadequate	WBL turn pocket may be extended to provide the necessary storage by removing median and
	AM	NBL	2	200	2	200	48	480	2	200	57	580	Inadequate	NBL turn pocket may be extended by approximately 250 feet by removing median and landscaping. Further turn pocket lengthening to provide the required queue storage is not feasible due to the NBL turn pocket at the adjacent shopping center driveway.
	PM	NBL	2	200	2	200	34	340	2	200	37	380	Inadequate	
Capitol Expressway and Aborn Road	AM	WBL	2	270	3	500	45	300	3	500	73	500	Adequate	
	PM	WBL	2	270	3	500	56	380	3	500	63	420	Adequate	

US 101 / Capitol Expressway Interchange Operations

This section describes existing and future operations at the U.S. 101 / Capitol Expressway interchange. The EEHVS includes improvements to U.S. 101 and the interchanges in the Evergreen area.

The U.S. 101 Central Corridor Study, which was prepared under the guidance of the VTA, identified a range of improvements that would reduce traffic congestion resulting from merging and weaving conflicts and improve the overall U.S. 101 freeway system performance. This includes eliminating mainline traffic bottlenecks and improving safety. In response to comments made by Caltrans Highway Operations and Design, the project description resulting from this study was refined through further operations analyses. Because the Evergreen • East Hills Vision Strategy would provide the necessary funding for such freeway improvements, they are considered project-sponsored improvements and are thus included in the analysis of project levels of service.

Freeway lane imbalances, weaving problems, and excessive queues will all be addressed with the interchange improvements. The following improvements will be constructed on U.S. 101 between the I-280/I-680 interchange and the Yerba Buena Road interchange:

- Construct an additional lane in the southbound direction from the current lane drop just south of Story Road to the Yerba Buena Road overcrossing.
- Construct an auxiliary lane in the southbound direction between the Tully Road and Capitol Expressway interchanges.
- Reconfigure the U.S. 101/Tully Road interchange, converting the interchange from a full cloverleaf design to a partial cloverleaf design (eliminating the two existing loop off-ramps).
- Reconfigure the U.S. 101/Capitol Expressway interchange, converting the interchange from a full cloverleaf design to a partial cloverleaf design (eliminating the two existing loop off-ramps).
- Add a new on-ramp from the northbound collector-distributor (C-D) road between Yerba Buena Road and Capitol Expressway to northbound U.S. 101 to allow traffic from Yerba Buena Road to enter the freeway before Capitol Expressway.
- Remove the existing C-D road and add a southbound auxiliary lane between Capitol Expressway and Yerba Buena Road.
- Construct a new two-lane off-ramp from southbound U.S. 101 to Yerba Buena Road allowing traffic to exit the freeway after Capitol Expressway.

All of these improvements will be constructed within the existing Caltrans right-of-way.

Caltrans and the VTA have prepared a Draft initial Study (IS) / Negative Declaration (ND) for the proposed U.S. 101 operational improvements independent of this project (EEHVS).

Queueing at Freeway Ramp Meters

Ramp meters control all of the U.S. 101 on ramps serving the Evergreen area. Presently, meters control freeway entrances for the peak direction of travel only — northbound during the AM peak period and southbound during the PM peak period. Since the Evergreen area is predominantly residential and employment centers are concentrated mostly in areas to the north, the longest ramp meter queues occur at the northbound on ramps during the AM peak hour. The existing maximum queue lengths and delay at northbound U.S. 101 on ramps serving the Evergreen area were measured during the AM peak hour through direct observation in the field. Table 31 shows queue lengths and delay at the Capitol Expressway on-ramp.

The analysis results show that delays entering northbound U.S. 101 from Capitol Expressway would increase by about 30 seconds above existing conditions due to the increase in traffic generated by the Evergreen • East Hills Vision Strategy. The project improvements would reduce the delay compared to existing conditions by about 15 seconds.

Table 31
Maximum Queue Length and Delay at Capitol Expressway and Northbound U.S. 101 On Ramp – AM Peak Hour

	WB Capitol Expwy[a]	
	Queue Length (veh.)	Wait Time (min:sec)
Existing Conditions	88	06:30
Background Conditions	50	03:45
Project Conditions		
Scenario V	93	07:00
Scenario V with Improvements	84	06:15

Notes:
Queue times were calculated using the surveyed existing (2004) queue lengths and estimated background and project trips, in combination with the future ramp meter rates obtained from the *Final Draft Traffic Operations Report--US 101 Operational Improvements from I-280/680 to Yerba Buena Road*, Fehr & Peers Associates, Inc., July 2005.
[a] The queue at Capitol Expressway includes both mixed-flow and HOV traffic.

Capitol Expressway Operations

Lane imbalances, weaving problems, and excessive queues on Capitol Expressway will all be addressed with the interchange improvements. With the conversion of the interchange from a full cloverleaf to a partial cloverleaf design, northbound and southbound U.S. 101 exiting traffic will enter Capitol Expressway from signalized intersections, thereby eliminating much of the lane imbalances and weaving associated with the traffic between the current on- and off-ramps.

ITS Plan

Intelligent Transportation Systems, or ITS, is the use of communications and computer technology to increase the efficiency of signal operations and reduce delays in the system. The City of San Jose has developed an ITS plan for the Evergreen area. The plan calls for traffic surveillance cameras and signal interconnect systems to be installed via cables, conduit, and trunk lines or wireless links where appropriate. Cameras are planned to be added to four intersections within the corridor:

U.S. 101 NB On/Off-Ramps and Capitol Expressway

U.S. 101 SB On/Off-Ramps and Capitol Expressway

Silver Creek Road and Capitol Expressway

Capitol Expressway and Aborn Road

A cable signal interconnect system will be installed on Capitol Expressway from U.S. 101 to Quimby Road, and beyond into the northern segment of Capitol Expressway, as part of the ITS Plan.

Pedestrian and Bicycle Facilities

The corridor was evaluated for pedestrian and bicycle access. Recommendations for improvement are made where appropriate.

Pedestrians

Capitol Expressway currently has no sidewalks. As part of the EEHVS project, sidewalks will be installed on both sides of the expressway to link up to the sidewalks that will be installed as part of the LRT project.

Bicycles

There are no bike lanes on Capitol Expressway. However, the expressway has wide shoulders on both sides of the street, and bikes are allowed to use them.

Summary of Improvements

Project improvements to the Capitol Expressway Corridor, south of Quimby Road, are as follows (see Figure 31):

Required Transportation Improvements

- Convert the existing HOV lanes to mixed-flow lanes, providing four through-lanes in each direction on the segment of *Capitol Expressway* south of Quimby Rd.

- Add a second left-turn lane on the northbound and southbound approaches of the *McLaughlin Avenue / Capitol Expressway* intersection. Modify the phasing of the existing traffic signal to provide protected left turns on the northbound and southbound approaches.

- At the *Silver Creek Road / Capitol Expressway* intersection, widen the curb lane on the westbound receiving leg of Capitol Expressway to eliminate impedance to westbound through traffic caused by vehicles turning into the adjacent shopping center. Extend the eastbound left-turn pocket.

- Add a second left-turn lane on the northbound approach at the *Capitol Expressway / Aborn Road* intersection. Add a fourth through lane in both directions on Capitol Expressway.

- On the segment of *Capitol Expressway* south of Quimby Rd., add sidewalks, streetlights, trees, and traffic signal upgrades/modifications to both sides of the expressway. Add median landscaping.

Recommended Transportation Amenities

- Extend the westbound left turn pocket at the *Silver Creek Road and Capitol Expressway* intersection by 40 feet by cutting into the landscaped median. Extend the northbound left turn pockets by 250 feet by cutting into the landscaped median.

- Install ITS camera systems and signal interconnects at the intersections of *U.S. 101 NB and SB On / Off-Ramps and Capitol Expressway, Silver Creek Road and Capitol Expressway, and Capitol Expressway and Aborn Road.* Install conduit, and communication cable as appropriate.

- Consider a study of potential weekend traffic signal coordination on *Capitol Expressway,* south of Quimby Road.

Required as Part of Site Development

- Install a traffic signal on *Capitol Expressway* to provide access to the Arcadia Property.

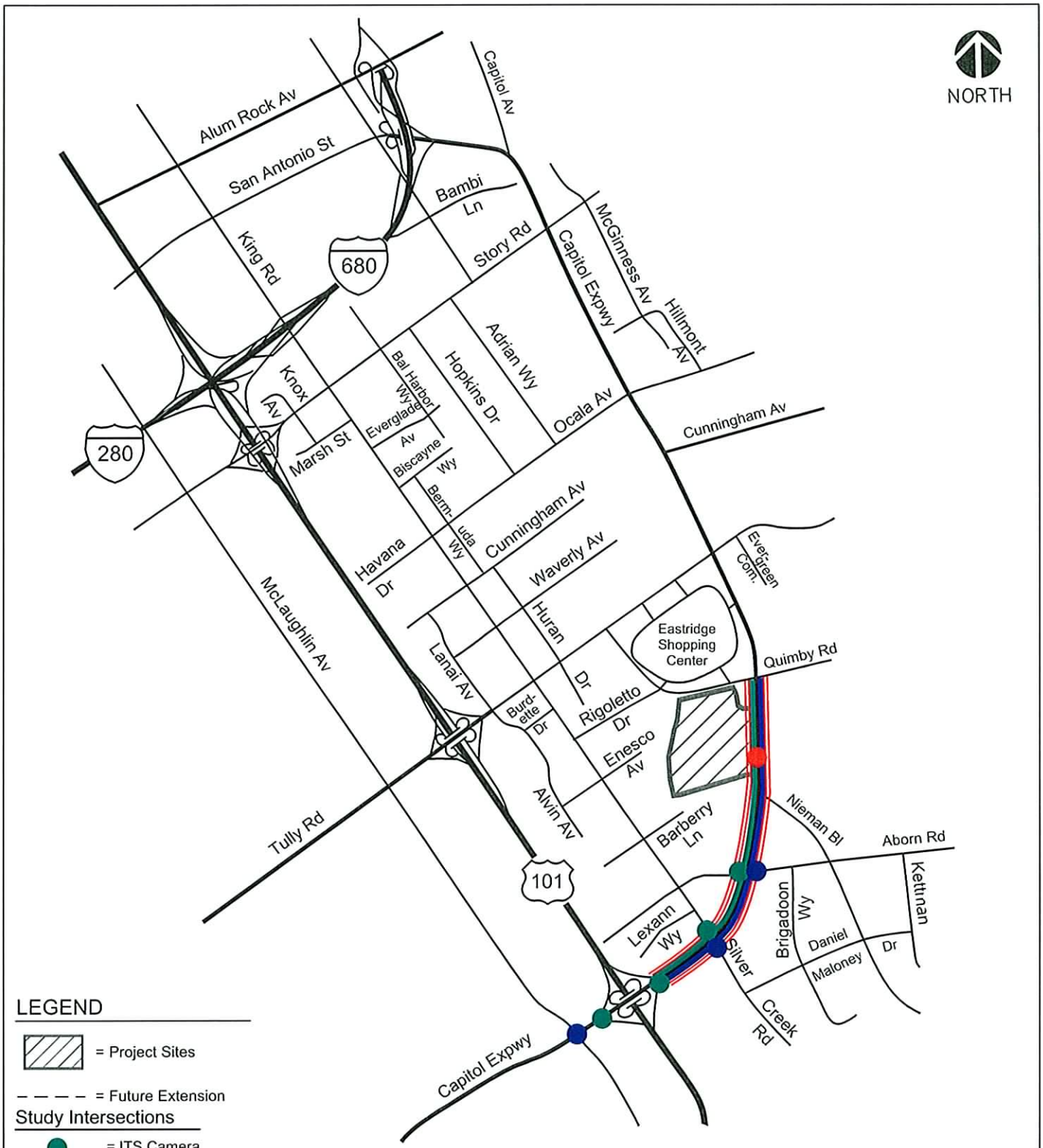

Figure 31

CAPITOL EXPRESSWAY QUIMBY AVENUE TO US-101 CORRIDOR IMPROVEMENTS

Hexagon
Transportation Consultants, Inc.

Evergreen • East Hills Vision Strategy

12.
White Road / San Felipe Road Corridor

This chapter describes the transportation system in the White Road Corridor, including roadway cross-section, signalized and unsignalized intersection operations, intersection queueing, and pedestrian and bicycle facilities. The White Road Corridor in the Evergreen • East Hills area extends from the White Road and Alum Rock Avenue intersection in the north southward approximately seven miles to the San Felipe Road and Villages Drive intersection in the south (Figure 32), providing access to many commercial and housing areas, Mt. Pleasant High School, located between Marten Ave. and Rocky Mountain Dr., Evergreen College, and two of the new project sites: the Pleasant Hills Golf Course Property and the Evergreen Valley College Property.

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